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UTILITY COMPANIES' RELATIONSHIP TO MERCHANDISING FIELD

Some of the locally-owned telephone companies in New Hampshire are complaining that they cannot, as formerly, buy their equipment and supplies through the New England Bell organization at a cost plus 2 per cent the price paid by the Bell associated companies. From reports received by TELEPHONY from the New Hampshire Telephone Association, it seems that this arrangement was canceled January 1, the reason alleged being that it was considered trade discrimination and there was a chance that the Federal Trade Commission might step in and forbid a continuance of the practice.

There is a well-defined impression throughout the country right now that utility companies should restrict their business activities to the supplying of service to the public, and not engage in manufacturing and merchandising operations that would bring them into competition with other concerns which make that their special business.

This theory has come into prominence lately since the Federal Trade Commission has been investigating the purchase of newspapers and the sale of news print by the International Paper & Power Co., indicating an unethical—not to say illegal—tie-up between utility service and general business.

The decision of the New England Telephone & Telegraph Co. to withdraw its former sales arrangement with the New Hampshire companies is undoubtedly meant to avoid collision with the Federal Trade Commission along similar lines that have caused the power interests so much trouble at Washington of late.

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Independent telephone manufacturers and supply dealers may feel gratified at this change in the New Hampshire situation, but they can justly contend that it should have occurred long ago. In other words, they can rightly contend that it never should have been necessary to withdraw such an arrangement for the simple reason that it never should have existed.

The United Gas Improvement Co. has a monopoly in Philadelphia for the sale of electric current for light and power. Shall it be allowed to extend this monopoly to electric refrigerators by offering, selling and servicing only one make of electric refrigerators? This question now is also before the Federal Trade Commission with whom a complaint has been filed by a manufacturer who claims his business is being seriously injured by the public utility company that is unfairly engaged in the merchandising business.

* * * *

It is probably this controversy that led the New England Bell to withdraw the arrangement whereby New Hampshire telephone companies purchased equipment and supplies from the Bell factory and supply house at prices accorded to Bell operating companies plus 2 per cent. The real business of the New England Telephone & Telegraph Co., of course, is to provide adequate local and long distance telephone service in the communities where it operates and not to help sell equipment and supplies to its connecting companies and increase the volume of the Bell factory and the Bell supply organization.

* * * *

The statement is made that this buying arrangement originated years ago when some of the farm lines in New Hampshire territory found it difficult to obtain materials as needed to keep up their maintenance, and the New England Bell cooperated with them in this way to help maintain the service. It is admitted that the practice should have ended when it became no longer necessary.

The New Hampshire companies will not suffer by reason of the change, as there are plenty of Independent concerns able to supply their needs. It is inevitable that present-day prices are higher than years ago when the Bell arrangement was entered into, as the costs of copper, steel and other raw materials have advanced considerably since those early days. This is merely in line with developments in all branches of industry, and is not peculiar to the telephone business alone.

* * * *

At various telephone conventions held this year, speakers have emphasized the desirability of Independent operating companies patronizing the manufacturers and supply dealers within their own group. This issue has been stressed and with

sound arguments to support it. The New Hampshire situation furnishes an example of the complications that occur when this practice is not followed.

The Independent manufacturers and supply houses know the needs of the local telephone companies, and in most cases have helped them to get started and to meet the problems that accompanied their growth and development. There is possible a cooperation in such relations that is mutually helpful. The old motto, "Patronize home industries," has special application to the Independent telephone business, and should be adhered to for the good of the entire telephone industry.

Unfair Competition.

The question of the right of a public utility company to engage in manufacturing and merchandising, thereby competing in such lines, is raised before the Federal Trade Commission by a complaint filed by the Merchants & Evans Co., of Philadelphia, makers of electric refrigerators, against 14 service companies doing business in Pennsylvania, Maryland, New York, New Jersey and Delaware. Seven specific charges are made to show that such merchandising is unfair competition, as follows:

1. That the utilities, having been given a monopoly in their service, are in a favored position with respect to their customers.

COMING CONVENTIONS.

Telephone Association of Vermont, Hotel Van Ness, Burlington, June 25 and 26.

United States Independent Telephone Association, Stevens Hotel, Chicago, October 22, 23, 24 and 25.

Independent Pioneer Telephone Association of United States, Stevens Hotel, Chicago, October 24.

2. That merchandising is not a necessary incidental to the conduct of their principal business.

3. That utility capital should be used for rate-base purposes only and that to apply it to merchandising is taking an unfair advantage.

4. That utilities by selling only a few makes of any appliance discriminate against other manufacturers.

5. That utilities offer special selling inducements in premiums, discounts and terms that cannot be given by other dealers.

6. That some utilities sell only those appliances made by themselves or by closely affiliated manufacturers.

7. That since the courts have prohibited the railroads from engaging in the coal business, it is illegal for utilities to engage in the manufacturing or merchandising business.

* * * *

In support of their charges the complainants have filed an immense amount of testimony alleging that utility interests are annually selling a half billion dollars' worth of appliances by reason of their special advantages, and are threatening the financial ruin of their competitors.

"It is self-evident," says one paragraph in the complaint, "that these various activities and practices on behalf of public service companies must in the end tend to create unregulated manufacturing and distributing monopolies in their hands (as an adjunct to their monopolistic public service business) for almost all devices that can be attached to electric and gas lines as producers; and, further, that having achieved such commercial monopolies they will in the future, as in the past, finally take unregulated monopolistic profits from the public on such appliances because then there will be little, or only feeble, competition left."

The complaining firm has also brought suit in the federal court at Philadelphia to enjoin the local service company from selling domestic appliances at retail.

* * * *

These various proceedings are expected to throw needed light on the question of how far a public utility can go in participating in lines of business other than giving service. The electric light and power industry is most directly interested in the agitation, thus far, but it is expected that any official decision of principles involved will practically affect all utilities—including the telephone industry.

Executives of Class A Companies Meet

Annual Conference of Class A Member Companies of United States Independent Telephone Association Considers Depreciation Reserve From Standpoint of Experience—Trend in Station Growth and Expected Development in Future

By Stanley R. Edwards

Over 50 representatives of class A member companies of the United States Independent Telephone Association attended the annual general conference of that group at the Edgewater Beach Hotel, Chicago, on June 6 and 7. Depreciation and the matter of growth of the class A companies were the principal subjects of discussion.

The discussion of the latter, led by R. F. Wilder of St. Paul, Minn., created the keenest interest. It seemed the consensus of opinion that the telephone industry had not made the intensive use of advertising and sales effort that other industries, particularly the automobile, have made in pushing their products. Sales activities, it was pointed out, would be more productive of increased revenue if directed toward selling P.B.X. service, extension sets, and toll service.

The general sessions were presided over by President F. B. MacKinnon of the association. The conference concluded with a luncheon conference on Friday noon, at which time F. A. Barnes of the bureau of accounts of the Interstate Commerce Commission, Washington, D. C., was the speaker.

The first session of the conference was opened by President F. B. MacKinnon, who briefly outlined the program for the sessions and then took up a discussion of the 1928 statistical operating data of the class A companies of the association. He briefly commented upon the different items in the statistical data and the progress that has been made during the past few years.

A. L. Geiger of the Washington office of the association, then summarized the various matters which have come before the Washington office. He referred to the United State Supreme Court decision in the O'Fallon railroad case, and stated that it did not affect any previous decisions in telephone cases.

Mr. Geiger also discussed the status of the federal communications bill and other measures before Congress, and briefly referred to cases before the Interstate Commerce Commission and the income tax department that have been handled by the Washington office.

At the Thursday afternoon session, Donald R. Belcher of the American Telephone & Telegraph Co., New York, presented a most interesting discussion on the use of

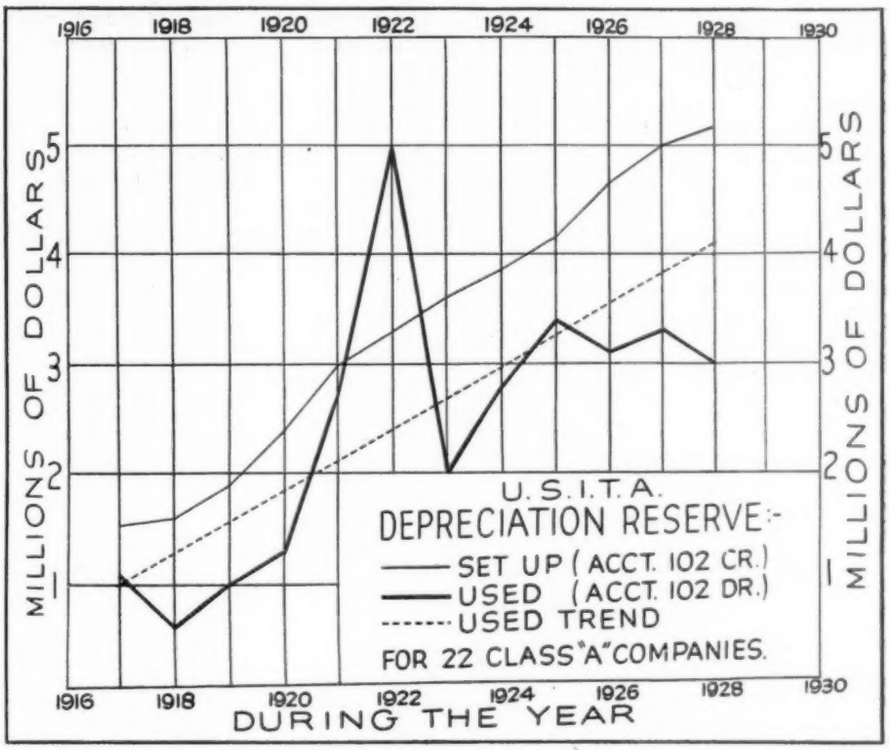
the depreciation reserve. He used a number of tables and charts to illustrate his remarks. These included the pro forma calculation of the group depreciation rate and the resulting accounting treatment, the effect of plant growth on the reserve ratio and the reserve ratio for various rates of plant growth, after attainment of stable age distribution, corresponding to each rate of growth.

Other charts illustrated why retirements in a growing plant do not normally equal in any year the amount of the accruing depreciation, and the effect of plant growth on an annual realized depreciation. A most interesting chart was that of the average realized life of No. 1 central office equipment at various stages of initial installation. This was based on the experience of 644 offices in the Bell system.

The different charts shown by Mr. Belcher were based upon figures of the Bell companies over a period of years and were most interesting to the telephone executives and accountants. Mr. Belcher was asked a number of questions and answered them in a most clear and convincing manner.

A. L. Staderman, engineer of the Citizens Independent Telephone Co., Terre Haute, Ind., presented the results of a study of Independent company depreciation reserves. There were 22 class A companies which had depreciation reserves going back to 1917. These companies form 65 per cent of the present class A companies.

"In making a study of the depreciation reserve of the Class A Independent telephone companies," said Mr. Staderman, "it seemed to me that the simplest way would be to present the data in graphical form so that the changes of values can be readily visualized rather than using columns of figures.



Depreciation Practices and Trend as Revealed by Careful Study of Figures of Independent Telephone Companies Over a Period of Years.

"Accordingly, I have prepared two charts which show the information regarding depreciation in its various aspects, being the combined experience of 22 class A companies. While there are at present some 60 class A Independent companies, I have used the results for 22 class A companies because only for this number is the data available going back as far as the year 1917.

Many of the other class A companies are a result of the recent merger of class B and C companies into groups and for these former class B and C companies the data was not available for this study. The 22 companies used, however, cover 65 per cent of the plant value of the total class A companies so that the results should be representative of the class as a whole.

	1919.	1926.	1927.	1928.	1919–1928. Increase.	1927–1928. Increase.
No. of central offices	1,015	1,156	1,174	1,193	178	19
No. of company-owned stations	677,663	1,036,192	1,072,021	1,104,067	426,404	32,046
No. of service stations	.....	47,908	48,066	48,760	.....	694
Toll wire mileage	.....	161,785	171,751	177,648	.....	5,897
Fixed capital	$ 88,180,885	$160,852,274	$173,111,115	$184,640,858	$ 96,459,973	$11,529,743
Total assets	101,725,824	183,518,660	196,728,924	214,704,889	112,979,065	17,975,965
Capital stock	45,083,147	81,279,733	82,913,355	87,973,957	42,890,810	5,060,602
Funded debt	29,869,921	51,438,128	64,307,319	68,185,250	38,315,329	3,877,931
Operating revenue	$19,535,165	$40,658,353	$43,155,659	$45,291,631	$25,756,466	$2,135,972
Depreciation	2,963,158	6,952,407	7,482,462	7,605,141	4,641,983	122,679
Current maintenance	3,617,877	6,628,261	6,943,701	7,037,674	3,419,797	93,973
Traffic	4,533,109	7,463,292	7,602,148	7,584,911	3,051,802	(d)17,237
Commercial	1,396,946	2,938,153	3,265,025	3,393,286	1,996,340	128,261
General and miscellaneous	1,734,719	2,779,763	2,991,785	3,121,389	1,386,670	129,604
Total operating expenses	$14,245,809	$26,761,876	$28,285,121	$28,742,401	$14,496,592	$457,280
Net operating revenue	5,289,356	13,896,477	14,870,538	16,549,230	11,259,874	1,678,692
All other revenue	9,878	467,560	462,192	590,499	580,621	128,307
Taxes	$1,166,109	$2,958,965	$3,286,917	$3,499,464	$2,333,355	$212,547
Other deductions	512,434	1,171,188	1,269,034	1,311,226	798,792	42,192
Total deductions	1,678,543	4,130,153	4,555,951	4,810,690	3,132,147	254,739
Income available for interest and dividends	$3,620,691	$10,233,884	$10,776,779	$12,329,039	$8,708,348	$1,552,260
Interest on funded debt	1,737,916	2,756,384	3,127,809	3,542,186	1,804,270	414,377
Available for dividends	$1,882,775	$7,477,500	$7,648,970	$8,786,853	$6,904,078	$1,137,883
Percentages:						
Operating revenue to fixed capital	22.2	25.3	24.9	24.5	Gain in telephones.	
Income available for I. and D. to fixed capital	4.1	6.4	6.2	6.7		
Available for dividends to capital stock	4.2	9.2	9.2	10.0	1919–1928.....62.9	
Interest to funded debt	5.8	5.4	4.9	5.2	1926–1927..... 3.5	
Depreciation rate	3.4	4.3	4.3	4.1	1927–1928..... 3.0	
Operating ratio—all expense to operating revenue*.	81.5	76.0	76.1	74.1		

The data of the Mutual Telephone Co. of Honolulu, the State Telephone Co. of Texas and the Texas Associated Telephone Co. are not included in this summary.
*This ratio includes taxes, rents and other deductions as operating expense.

General Comparative Summary of Operating Statistics of Class A Member Companies of United States Independent Telephone Association for 1919–1928 Inclusive.

In approaching the subject of depreciation, it becomes evident that it consists of three main divisions: the amount set up annually, the amount used annually, and the accumulated balance left in the reserve for previous years.

To an accountant the subject of depreciation presents itself in the form of the amount set up, or credits to account 102 of the Interstate Commerce Commission's accounting system for telephone companies, the amount used, or debits to account 102, and the accumulative ledger balance for account 102.

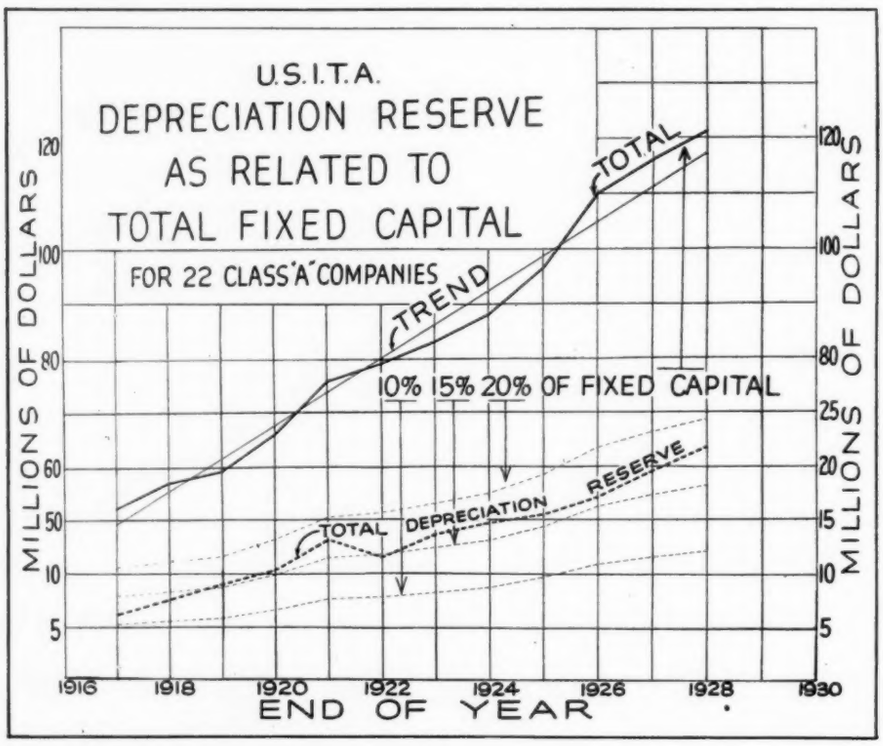
On the chart showing the amounts set up and used are three graphs or curves; the vertical lines representing millions of dollars, and the horizontal lines representing years during which the depreciation was set up or used. The light solid line represents the amount of depreciation set up annually for any given year; thus for the year 1917 there was set up about $1,600,000. For the year 1928 there was set up about $5,200,000. This curve is a rather smooth and regular curve.

The heavy solid curve is a very irregular curve and represents the amount of depreciation used or realized during any given year. This curve, as one would expect, fluctuates considerably from year to year as the amount of realized depreciation depends on the plant retired, which naturally will vary considerably from year to year with any one company and even a group of companies.

The great variation in this curve exemplifies very clearly the desirability of setting up the reserve from year to year so that when a heavy retirement takes place, the reserve is already accumulated for the purpose.

The great increase in the 'used' curve for the year 1922 was largely caused by two of the larger companies making heavy replacements in central office equipment.

The broken line represents the trend of realized depreciation or used depreciation reserve. This curve represents the amount that would be used each year if the realized depreciation would follow a steady rate and have no fluctuations. Of course, this cannot be expected but the trend curve does show what may be expected in future years. Thus the used curve dips downward for the years 1926, 1927 and 1928, although it cannot be expected to continue downward in view of past experience.



Curves Showing Relation Between Total Fixed Capital and Depreciation Reserve Based Upon Figures of Independent Telephone Companies.

The trend curve would indicate that in the future at least $4,000,000 a year will be used, or may be expected, as realized depreciation. It will be noted that the depreciation set up increased faster than the depreciation used. This is to be expected for a growing plant as a reserve is set up for the new plant which will not depreciate for many years.

We will now consider the second chart entitled, 'Depreciation Reserve as Related to Total Fixed Capital.' On this chart is shown the amount of total fixed capital in service at the end of various years; the vertical lines representing the total fixed capital in millions of dollars and the horizontal lines showing the various years.

The heavy solid line shows in terms of dollars the amount of total fixed capital on the books of the 22 class A companies. The thin solid line shows the trend in the growth of the fixed capital. It will be noted that the fluctuations are not great and that the growth is at a fairly uniform rate.

At the bottom of the chart there are three light broken lines, the bottom line equaling 10 per cent of the total fixed capital, the middle line equaling 15 per cent of the total fixed capital, and the top line equaling 20 per cent of the fixed capital for the various years.

The actual amount of money is indicated in millions of dollars on the right-hand side of the chart; thus 20 per cent at the end of 1928 did not quite equal $25,000,000, the total value being just slightly over $120,000,000.

In order to find the relation of the total depreciation reserve to the total fixed capital, the balance in the depreciation account is plotted by superimposing the amount on the three light dotted curves indicated.

The total depreciated reserve is indicated by means of the heavy dotted line. It will be noted that at the end of the year 1917, the depreciation reserve was about 12 per cent of the total fixed capital. It increased up to the end of 1921, when it reached about 17 per cent. It then dropped at the end of 1922 to a little less than 15 per cent on account of the large amount of reserve used during the year 1922, as indicated in the previously considered chart.

Since 1922 the depreciation reserve has increased in relation to the fixed capital until at the end of 1928, it was about 18 per cent of the total fixed capital.

It is appreciated that it is not entirely correct to compare the depreciation reserve to the total fixed capital, for the comparison should be made against the total depreciable fixed capital. The information to arrive at the depreciable fixed capital was not available, but even if it had been it would not have affected the results to any serious extent and for our purpose the data can be considered sufficiently accurate even when ignoring the fact that some fixed capital, such as land, is not depreciable."

After this presentation by Mr. Staderman, a discussion was entered into by the members of the association in regard to the data presented.

On Friday morning the general conference discussed the growth of class A companies. R. F. Wilder, general commercial manager, Tri-State Telephone & Telegraph Co., St. Paul, and chairman of the commercial division of the association, presented the results of a study he had made of the station gain of the class A companies during the past two years.

Unlike the Bell companies, practically every Independent company in the group, Mr. Wilder stated, reached a high percentage of telephones per 100 population, years

ago, and these properties cannot expect to grow as do the exchanges in the industrial cities that are reporting population growth.

The companies should not be discouraged, however, as to growth, for they can anticipate developing a lot of P. B. X. stations and can continue to push extension sets. The C. L. R. method of toll operating, Mr. Wilder declared, is the thing which accounts for the remarkable use of toll service. As indicating the great stability of P. B. X. extension stations, Mr. Wilder pointed out that extension stations are seldom ordered out until the main station is taken out.

Where a city is not growing in population, he advocated cultivating P. B. X. and extension service and pushing the toll business.

Great interest centered in the discussion of Mr. Wilder's remarks, which was opened by President MacKinnon, who stated that he had arrived at the conclusion that the telephone industry had been fooling itself as to growth. In many communities the rural problem has been dragged to one side and nothing done to meet it. Some one, he declared, must solve that problem. If a company's rates are not up, the company will not go out after new business, he stated.

E. C. Blomeyer, of Kansas City, Mo., declared that "The telephone industry is asleep. It does not go after new business." He pointed out that families having fine houses and several automobiles have no extension telephones when they should have half a dozen.

He referred to advertisements appearing in high grade magazines, of expensive telephone sets, to match the furniture and decorations of homes. These sets are not put out by the Independent manufacturers or the telephone companies. Manufacturers are now making telephone sets of different colors to match house decorations, so this outside competition can be met and the sets provided at a lower cost.

The automobile manufacturers, Mr. Blomeyer declared, have put over the two-car idea for a family and are now starting on a three-car idea, and many new houses are being built with garages for three and four cars. He thought the companies should cultivate the extension telephone idea.

Mr. Wilder stated that his company during campaigns for extension sets, suspended the service connection charge, after having obtained permission from the commission. He pointed out that oil burners, vacuum cleaners, electric toasters and other electric labor-saving devices are all in homes but no extension telephones are placed.

He thought it might be well to revise installation charges so that an extension telephone could be installed at the same time as the main station, with no charge for the installation of the extension set.

George A. Gann, general superintendent, the Tri-State Telephone & Telegraph Co., St. Paul, Minn., advocated a real intercommunicating house system, for there are none in his opinion that are satisfactory. He suggested simplifying intercommunicating house systems so that extension telephones can be switched from the city system to the intercommunicating system and vice versa.

He pointed out that the average telephone man has more than one telephone in his home, but he has not sold that idea to others. He advocated a charge for coloring handsets to match the home decorations.

John A. Agee, general manager, Lincoln Telephone & Telegraph Co., Lincoln, Nebr., said that in the past three years there had been a net growth of between 4,000 and 5,000 stations in Lincoln, and probably 50 per cent of them were extension sets. The service analysis of telephone needs which the company makes have been very profitable in producing business. Each month a leaflet is enclosed with the monthly bills telling of extension service benefits.

A new development which the Lincoln company is trying out, Mr. Agee stated, is a secretarial service. A professional man who does not have an assistant in his office, when he leaves his office for a short time, throws a switch, calls the secretarial operator and gives her the information concerning his whereabouts. She takes all calls made to his telephone during his absence and notes any messages. Mr. Agee believes that this will develop into a good revenue producer as the people who are already taking it are enthusiastic over it.

Mr. Wilder referred to the psychology of selling more extension stations and cited the case of an office of 2,200 stations where 351 handsets were sold in a week. The exchange is to be cut over shortly to new equipment and subscribers were told that they could have the handsets with no installation charge if they were installed at the time the installer would be changing the sets.

These handsets cost 25 cents per month extra but it seemed that the suspension of the $1.00 installation charge had a psychological appeal that brought in the orders. He believed that a great many more handsets would be ordered before the cut-over was actually made.

Mr. Wilder expressed the opinion that it was desirable that every company push extension stations along the same lines. High pressure selling, however, he does not consider advisable.

Others participating in the discussion were Frank F. Fowle, consulting engineer, Chicago; R. V. Achatz of Aurora, Ind.; Harry M. Engh, of Erie, Pa.; and Carl D. Brorien, of Tampa, Fla.

In bringing the session to a close, President MacKinnon remarked that the commercial division of the association, as a result of the discussion, has a great deal of constructive work laid out for it.

Following the general luncheon on Friday, President MacKinnon introduced F. A. Barnes of the bureau of accounts of the Interstate Commerce Commission to speak on the proposed changes in the commission's accounting regulations. Mr Barnes in the morning had met with the accountants of the class A companies, discussing in detail changes which it is proposed to make. The commission has had in mind a revision of the classification of accounts which has been in effect for 17 years and this will be announced soon.

Mr. Barnes outlined the methods under which the present classification of accounts were developed and gave a clear and concise account of what the commission has in mind and the problems that confront it.

Executive Committee of Independent Pioneers Meets.

The executive committee of the Independent Pioneer Telephone Association of the United States held a meeting at the Edgewater Beach Hotel, Chicago, on June 6, practically the entire committee being present.

Plans were discussed for making the association greater. Along this line it was decided to recommend to the membership the establishment of a new class of members to be known as junior members. This will permit those who have been in the Independent telephone industry for 10 years but not over 15, to become affiliated with the Pioneer organization.

This change in membership classification, which involves a change in the by-laws, will be submitted at the annual meeting of the organization, which will be held in Chicago on Thursday, October 24.

A committee was appointed by President J. G. Ihmsen, Albany, N. Y., to classify the relics which have been sent in by members. These are comprised of telephone equipment and apparatus used in the early days of the Independent movement.

These are to be placed in the Rosenwald Industrial Museum in Chicago, but until the museum's buildings are completed they will be properly stored in a place provided by the Museum. The committee in charge of cataloging and handling this material consists of Secretary-Treasurer J. K. Johnston, Indianapolis, Ind.; John Z. Miller, Erie, Pa.; and William Hubbard, Winnetka, Ill.

Plans were also discussed for the annual meeting of the organization, which will be held in Chicago, October 24, at the Stevens Hotel. The program is being carefully considered and undoubtedly it will be one that will be of great interest to the Independent Pioneers.

Pennsylvania Has Successful Convention

Interesting Addresses Feature Meeting of Pennsylvania State Telephone & Traffic Association, Held at the Penn-Harris Hotel, Harrisburg, May 28 and 29—Review of Association Activities in Report by President H. E. Bradley

Pennsylvania added one more successful telephone convention to its credit on May 28 and 29 when the Pennsylvania State Telephone & Traffic Association held its annual meeting at the Penn-Harris Hotel, Harrisburg. The registration did not number 1,000, nor even 500, nevertheless by 2 o'clock on Tuesday, May 28, when the first meeting was called to order, at least 90 per cent of those who had registered up to that time were in the convention hall and ready to take part in the meeting.

On Tuesday the delegates and visitors were entertained at a theater party and on Wednesday evening about 250 attended the banquet and dance in the ball room of the Penn-Harris Hotel, which was decorated to represent a summer garden with lattice work, arbors, trailing vines and summer flowers. Music during the dinner and for dancing until midnight was furnished by C. Lloyd Major's recording orchestra and several specialty numbers were introduced during the evening.

The manufacturers' exhibits were most interesting and added materially to the success of the convention:

About 75 operators attended the two sessions of the operators' conference held on Tuesday and presided over by Mrs. Mabel P. Sellvin, chief operator, Jamestown Telephone Corp., Jamestown, N. Y.

Papers were presented and discussed on the following subjects: Tickets and their use; value of central office supervision; value of central office records; service complaints; loss of revenue due to improper use of circuits; public relations; switchboard markings; how does the public get an impression of our service; proper handling of cords; increasing company revenue through completion of toll calls; accurate timing of toll tickets and proper report charges; problems of a small town operator; cooperation between toll center and tributary office; the operators' problems and necessary qualifications; selecting and training operators and central office relations with P.B.X. operators.

President's Annual Record.

President H. E. Bradley of Harrisburg opened the first session of the convention. His report on association activities follows:

"In the closing paragraph of my report last year I said in part: 'In looking backward once more, I can find no fault with our progress. We are half as old as the industry itself, and we have kept pace with it in the things we have elected to do for our companies. Looking forward into the future, I can see nothing to fear. I do not believe there will be any radical changes in the telephone situation in Pennsylvania in 1928.'

So I may repeat the first part of that statement. In looking back over the year 1928, I can find no fault with our progress. We are more than half as old as the telephone industry, and we have served our companies to the very best of our ability,

"We Who Have Spent the Best Years of Our Lives in the Telephone Industry Are Fortunate Indeed," Says President Bradley in His Annual Address, "To Have Been Connected With an Industry Which Has Done so Much to Add to the Comfort, Pleasure and Education of Our Nation and of All the Nations of the World."

in all of those many ways in which they have permitted us to aid and assist them.

I wish to emphasize that point—in all of those ways in which they have permitted us to aid and assist them. Nearly ten years have passed since we established our offices in Harrisburg. The main object in our coming here was that we might establish a personal contact between our companies and the various departments of the state government, in the interest of a better understanding and easier solution of some of our problems.

That this move has proved to be a popular one with the heads of state departments, especially in the public service commission, is evidenced by the many times they have made use of our services in various ways. Some of our companies, however, have not yet awakened to the fact that we can save them time and money if they will only let us act for them. We cannot force them to accept our services, although its importance has been brought to their attention at times, by the commission referring them to us for assistance.

Let me cite you one case. One of our companies and not a small one filed a tariff of new rates. The tariff, not being in proper form, was rejected. Another tariff was filed and it, too, still not in proper form, was about to be rejected when the rate bureau called us up and asked if this was one of our companies. Upon our assurance that it was, we were requested to 'Please show them how to make up a tariff.'

Our offer of assistance was accepted by the company, the tariff was prepared, filed and accepted by the commission, but the company had lost one month at the new rate while it had been overlooking a service which cost it nothing.

The preparation of tariffs, supplements, adoption and cancellation notices, petitions with their copies, exhibits, original and certified copies of agreements, notification of publication and proof of service are all simple matters if you know the proper form—and if there is one thing the commission is long on it's form. The active part of your state association has had ten years' experience in handling this type of work. Why not take advantage of that experience when it costs you nothing?

Many companies seem to think that they must employ an attorney in every matter pertaining to the public service commission when, as a matter of fact, the only two things they need in a majority of cases are correctly prepared papers and a notary to certify to that fact. I could cite you many instances to bear this out, but only let me say once more—keep your association in mind and give us an opportunity to help you.

On October 6, last, we sent out a general notice to all companies regarding the rapid extension of power and light lines throughout the state, quoting the public service commission's general order No. 13, and warning all companies to see that their interests were protected. A few days later we received a letter from a small company in the central part of the state, stating that a new power and light line had just been completed in its territory and that in some instances the poles had been placed directly beneath their line and extending up through their wires. The matter was placed before the engineering department of the commission and a few days later I was invited to accompany two

of the commission engineers on a visit to the territory in question.

We found conditions to be even worse than described. The line was along a narrow country road and in some instances the telephone wires had been pushed to one side and were resting against the poles of the power line. Luckily for the telephone company the power had not yet been turned on, and the power company was notified not to put the line into service until the necessary changes for the protection of the telephone company had been made.

Serving Non-Member Companies.

"Incidentally, this telephone company was not one of our members, but without our help in bringing the matter to the attention of the commission, it would either have stood by and seen its service ruined or have spent considerable money in legal action against the power company. This is only one of many instances in which we have gone out of our way to serve companies which do not belong to our association.

In the routine work of our toll clearing department we have continued to give the same careful attention to member companies' settlements as in the past. Our toll clearings for 1928 were $268,132.20, and this brings the total clearings of the association to a little less than $10,000,000, a figure which, I think, is far above that of any other association giving its member companies a like service.

Many other matters have occupied our attention during the year. Some 28 tariffs and supplements were prepared and filed, and a number of hearings were attended in the interests of our companies. We have been criticized for not advertising our activities, but if you will keep in mind that a large part of our work is in the interest of the individual company and very often of a confidential nature, you will understand that it would not be good policy to broadcast the results.

We have avenues through which we can obtain confidential and advance information on many questions and to violate that confidence would be to close those avenues immediately. Our relations with all departments are most cordial and in order to be of the greatest help to our companies we must keep them so.

There have been no radical changes in the telephone situation in Pennsylvania during 1928. True, there have been a few changes in the ownership of certain telephone properties, but these changes, I believe, will work out to the ultimate benefit of the industry as a whole and the public at large.

Newcomers in the Field.

"New interests have acquired control of some of our properties, but we have found them to be a hard-working, conscientious body of telephone men, looking for a sound investment and an opportunity to serve the public by giving them a high type of service.

In this we are fortunate, in that we have escaped the operating methods of the wily promoter, looking only for an opportunity to fatten his own purse at the expense of the industry and an unsuspecting public. Let us welcome these newcomers, encourage them, work with them, that we as well as they may profit through their entrance into the telephone field of Pennsylvania. There is room in our industry for new blood and new money when it is backed by energy, ambition and a desire to give an honest service at an honest rate.

In analyzing the telephone conditions in Pennsylvania let us be honest with ourselves. There is still room for improvement. Figures show that there is one telephone to every six people in the United States. New York state betters this figure with one for about every five, while Pennsylvania has only one for about every seven plus. There is still room for expansion and there are still rural communities without adequate or up-to-date service.

We have now before the commission a complaint against one of our smaller companies for poor toll service. The complainant states that he can drive six miles and get good toll service over the lines of the company with which this small company connects and naturally asks why. It's the old story of 100 miles of good toll lines ruined by six miles of junk, and a company that lacks the nerve to charge a rate that will permit it to give a commercial service.

Pennsylvania's Telephones.

"Since 1921, when the telephone act was passed, there have been many changes in company ownership. At the close of 1921 there were 1,003,477 telephones and 1,101 exchanges in Pennsylvania and by the end of 1928 this number had grown to 1,462,691 telephones and 1,052 exchanges, an increase of 459,214 telephones and a decrease of 49 exchanges. According to Bell reports for 1921, they had 729,743 telephones and 432 exchanges and for 1928, 1,149,783 telephones and 342 exchanges, showing an increase of 420,040 telephones and a decrease of 90 exchanges.

At the close of 1921 there were 273,734 Independent telephones and 669 exchanges, and in 1928, there were 312,908 telephones and 710 exchanges, an increase of 39,174 telephones and 41 exchanges.

While there is no way of estimating how many duplicate telephones have been eliminated, it is safe to say that a large majority of the decrease of 49 exchanges is due to the elimination of competition in those territories where the unification of properties has already been completed. The large increase in Bell stations can be attributed to the two cities of Philadelphia and Pittsburgh, where the number of stations has nearly doubled in the past seven years.

From the standpoint of public convenience, there can be no doubt that the elimination of competition is an advantage, but it is still an open question as to its effect upon the service in the community. Under competition each company must be active, aggressive and ready to take advantage of every opportunity as it presents itself. Without competition the company is in danger of falling into careless habits, because it thinks the public must come to it, or do without service.

Legislative Activities.

"You will all be interested in a review of the last session of the legislature, which adjourned on April 18, after establishing a new record for bills introduced and passed. During the session there were 3,640 bills introduced, 1,344 in the Senate and 2,296 in the House, about 800 more than at any previous session. Of the bills introduced 1,166 reached final passage and of this number 955 were approved and 211 vetoed by the governor.

There were 22 bills which affected the telephone industry, but only two reached final passage and these were vetoed. These two required all corporations of the second class formed by merger, to record certified copies of the original agreement of merger and certified copies of the certificate of merger, in the office of the recorder of deeds in each county wherein the merged corporation might hold any interest in real or personal property. While not particularly objectionable, these requirements would have caused considerable annoyance to those companies operating in two or more counties.

So much opposition developed against Senate bill No. 537, conferring the right of eminent domain upon telephone and telegraph companies, that it was thought wise to let it die in committee rather than to bring it to a vote and have it killed in either House or Senate. No doubt this bill will again be brought out in 1931 and will then stand a much better chance of passing. In the meantime we should do all that we can to create a favorable impression in the minds of our legislators of the 1931 session in its behalf.

During the early part of the session the telephone, telegraph and power and light interests were invited to confer with the highway department in the framing of a bill placing the planting and care of trees along the public highways under that department.

Lack of cooperation at the last minute by the power and light interests ruined the chances of such a measure, although the telephone and telegraph interests were well satisfied with the final draft. The question of tree planting along the highways is already a serious problem and I should not be surprised to see the matter put up to the public service commission in very definite form in the near future.

So closed another session and again we may rest in peace for another two years.

I wonder what those two years hold in store for our industry.

The people of this nation of ours are becoming a leisurely race, more and more each year. Evidence of this fact is found in the millions of automobile owners and the constant demand for better roads upon which to travel; in the increasing number of theaters in our cities filled to capacity for four and five performances each day; in the enormous returns from professional baseball and in the thousands of acres of land devoted to golf courses. Soon we will have the five-day week, and as soon as that is established there will begin a movement for a Friday half-holiday. We lose no opportunity to declare a holiday either national, state or local.

By a leisurely race I do not mean a lazy race, for the average American plays just as hard as he works. The dollar value of the output of our industries is greater than ever before and the dollars invested in our public utilities are ever increasing by leaps and bounds. This being true, how do we account for the increase in play hours and the decrease in work hours?

The explanation is simple; namely, the increased efficiency in the modern methods of transacting business, the elimination of waste and the standardization of methods of manufacture and the higher education of the public in the value of the use of all labor-saving devices.

Farm Labor-Saving Devices.

"On the farm the tractor and truck have replaced the horse, resulting in increased acreage under cultivation and quicker delivering to market. In the farmhouse as well as the city home the household duties are reduced to a minimum by the use of electricity. In the manufacturing plant we find electric power and modern machinery making possible a 50 to 75 per cent increase in production in the same given period. In the office, too, we find modern methods playing a most important part in the speeding up of the work of the executive force.

In all of this modernization and speeding up of business methods the telephone industry has played a very large part. The executive is in constant touch with the heads of departments and they, in turn, with those parts of the plant under their supervision. Branch offices in distant cities are like another room in the same building and even foreign markets seem just around the corner. The telephone has brought the farmer and the city man closer together and created a better understanding and kindlier feeling between them.

No longer must the salesman make long and expensive trips to call upon his customers. He travels and sells by telephone. No longer does the up-to-date executive transact business by mail, messenger or telegraph. He has adopted the instantaneous and personal touch of the telephone method.

In conjunction with radio we have increased greatly the safety of the seas and through broadcasting and picture transmission, we have aided in shortening the average criminal career. Through scientific research the telephone industry has rehabilitated the talking machine and remade the movies, for the silent drama is becoming a thing of the past.

Outlook for the Future.

"What next? Who knows? Ships have been guided through water and planes through the air without the aid of pilots, and automobiles through the crowded street without a driver at the wheel. And what about television? Soon we will see as well as talk and hear by telephone and every home may have its talking movie.

A father remarked the other day that he was sorry for his sons, because everything had been done in the last 50 years and there was nothing left for them to do. I think he is all wrong. I believe that the sons of the next 50 years will have greater opportunities and will see greater things accomplished than have the fathers of today.

So I see nothing to fear in the future. We who have spent the best years of our lives in the telephone industry are fortunate indeed, and should feel proud to have been connected with an industry which has done so much to add to the comfort, pleasure and education of our nation, and in fact of all the nations of the world.

There will be additional changes in the telephone situation in Pennsylvania during the present year. Like those which have already taken place, they will work out to the general good of the industry and in the interest of the public at large, and after all it is the public we serve and must keep in mind first, last and all the time."

F. B. MacKinnon, president, United States Independent Telephone Association, Chicago, who was to have been the second speaker, was unable to be present, but sent a fine substitute in the person of Alfred L. Geiger, of Washington, D. C., attorney for the national association. Mr. Geiger spoke from notes on legal matters of interest, calling special attention to the decision of the United States Supreme Court in the O'Fallon case.

"Furnishing Modern Telephone Service to the Small Community at a Profit" was the subject of a most interesting talk by E. R. Stonaker, consulting traffic engineer of the Stromberg-Carlson Telephone Mfg. Co. of Rochester, N. Y.

Merchandising Telephone Service.

Merchandising methods in the telephone industry, Mr. Stonaker pointed out, have been based upon the idea of selling to meet the demand, contrary to automobile men, who plan their methods to meet production and not the demand. People have been educated to buy and pay for the latest designs in automobiles, he said, and not many would want one that they had to crank.

"Why not merchandise telephone service the same as other products?" the speaker asked, for people would pay for modern convenience in telephoning rather than continue with the magneto telephone which has to be cranked. First make telephone service satisfactory and then raise the rates to where they will pay for making the service satisfactory. "Spend a few thousands more when you are spending money on outside plant to convert it to common battery service," he said.

The probable cost for a common battery system of 200 lines would be approximately double that of a magneto system, but figures showed the savings in handling traffic would be more than the difference in the costs of the common battery and magneto switchboards.

"Better service," said he in closing, "with better equipment gives better revenue."

Miss Kathryn Diffenderfer, the Cumberland Valley Telephone Co.'s chief operator at Chambersburg, Pa., read a very interesting paper on "The Operator's Relation to the Public," which was full of good advice to operators, and showed considerable thought and a knowledge of her subject. Miss Diffenderfer's paper will be published in a future issue.

Tree-Trimming Methods.

"Trees and Public Service," by C. M. Scherer, pathologist from the Davey Tree Expert Co. of Kent, Ohio, the last number on the program for Tuesday, introduced a new subject on telephone conventitons' programs. Mr. Scherer showed about 50 slides, illustrating correct and incorrect methods of tree trimming.

He summed up his talk in the statement that "Practically all of the troubles arising from tree trimming lie in the failure of the utility man to understand the point of view of the tree owner, who places an esthetic value upon his trees; and the failure of the tree owner to understand the point of view of the utility man, who thinks only in terms of service to the public.

"A little education, a little common sense and a little more consideration on the part of each for the point of view of the other will go a long way towards smoothing out tree trimming troubles," said Mr. Scherer.

On Wednesday morning, May 29, an open meeting of the service committee was held, presided over by G. S. Herbert, its chairman, who is engineer of the Cumberland Valley Telephone Co., Harrisburg. At the request of the committee the address of Harry N. Faris, technical engineer, The United Telephone Co., Abilene, Kans., was presented at this meeting.

Mr. Faris' talk described the remedial practices which have proved most effective

assuming that all present were familiar with the nature and sources of transmission troubles. Further simplification will result, he stated, if a distinction is made between transmission troubles due to improper maintenance and transmission deficiencies due to improper equipment or toll lines.

As the essentials of good transmission Mr. Faris classified the following: Proper subscribers' station equipment: efficient cord circuits; good line repeating coils for phantom groups; ample line conductivity; good insulation, and freedom from cross talk and inductive disturbances.

Each item essential to good transmission was taken up individually and discussed in detail by Mr. Faris and remedies for the troubles common to both common battery and magneto type systems described.

"We must realize," said Mr. Faris, "that the most ideal methods, which would be used in new work, are seldom available because we must correct deficiencies and exhaust the useful life of equipment and construction in place."

"With the necessity to observe financial limitations and commercial possibilities," he said in closing, "comes an opportunity to show managerial ability and to save our salary as many times over as possible by economies which do not impair the value of our service to the public."

Mr. Faris' paper appears in full on other pages of this issue.

The first speaker on the afternoon program was Wm. J. O'Hea, secretary of the Rochester Telephone Corp., Rochester, N. Y., who spoke on "Publicity and Public Relation."

The importance of having good public relations with employes and what the Rochester company is doing in this respect was first told by Mr. O'Hea. Social affairs, sales activities and employes' commission were discussed, and a brief description of the success of the special sales campaign last September was given.

The publicity of the company, Mr. O'Hea said, is divided into two classes: The printed word, such as bill inserts and newspaper advertising; and the spoken word—the radio and good-will advertising done by the employes themselves. The radio has accomplished a great deal in establishing friendly relations with subscribers and increasing sales, he said.

In order to maintain good public relations, the speaker named a number of things employes should do, among which were: Caution operators against premature disconnects; insist on our line gangs keeping the wires clear when working on a pole line, and expect the commercial department to make no promises that cannot be fulfilled.

Mr. O'Hea's paper will be published in a future issue.

"Modern Methods of Campaigning for New Business" was the subject of an address by I. D. Gindhart, Jr., commercial manager of the Keystone Telephone Co.

"Comments and Observations."

Ed Schade, of Johnstown, was kept at home by illness. He was ably represented by Tom Carliss, who is quite a busy boy.

John Wright brought an auto-car load of operators from Jamestown. He also sent a freight-car load of Wright metal partitions for the new north office building at the Capitol.

It is rumored that Karl Schotte will soon be running in double harness again. We wondered why he was not going to Holland this year.

"Winn" Rodormer, a "chip off the old block," did his best a break up an engagement while in Harrisburg.

"Jack" Coffey, of Indianapolis, and Chester Ruth of Cook Electric, were "shown around" the links at the Harrisburg Country Club by two fair ladies. The boys are going to practice up and try again next year.

Geo. Ihmsen and J. K. Johnston, the "Pioneer Boys," were after new members. George had quite a surprise on Wednesday afternoon when Mrs. Ihmsen dropped in on her way home from Florida.

Frank McKinney, Warren Safford, Doc. Jones and Gus Hirsch—the Ohio crowd—after "looking-in" on the Up-State convention at Rochester, N. Y., dropped off on their way home from Canada. In spite of all they could do, it's still wet up there.

One manufacturer left town in such a hurry that he forgot to pay his hotel bill. That reminds us that Geo. Rodormer says we should call it a "goat course" and not a golf course.

The most popular saying on Wednesday afternoon—"Will you cash a check for me?"

"Pop" Wilson and Geo. Rudy, Sr., were both missed—two old-timers who were always on the job. "Pop" is in Texas and George is ill at his home in York.

Vermont Convention Attendants Promised Interesting Meeting.

Plans for the program of the ninth convention of the Telephone Association of Vermont are being completed, and though all the details are not arranged yet, indications point to a most interesting and beneficial meeting. The convention will be held at the Hotel Van Ness, Burlington, on June 25 and 26.

F. B. MacKinnon, president, United States Independent Telephone Association, Chicago, will be on the program and discuss national telephone affairs. The Bell Telephone Laboratories will be represented by L. S. O'Roark, information manager, who will give an address on picture transmission, television and film methods of recording and reproducing sound pictures. This talk will be illustrated and will occupy one evening of the program.

The evenings during the meeting will be devoted to pleasure and entertainment. Music for dancing will be furnished by C. M. Shear of Rochester, N. Y., and convention attendants will be guests of the New England Telephone & Telegraph Co. on the other evening of the convention.

SEEING YOURSELF AS YOUR EMPLOYE SEES YOU

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

"What kind of an executive do you like best?" This might be a good question to discuss at an operators' conference; the answers placed, unsigned, in a box. Some of the answers would, undoubtedly, cause a number of executives to see wherein they were not measuring up to their employes' conception of a real honest-to-goodness executive.

The business of serving the public should be handled particularly. It is not enough that some employes in a business are outstanding in handling customers and in selling goods. No business organization is any stronger than the entire human material of which it is built.

Some employes have a natural knack in effectively handling the public. They seem to know just what to do and say; and they never change. Others need supervision and direction in order to keep them up to par, at least.

I cannot think of any business engaged in serving the public that can guarantee satisfactory service without competent supervision.

If an employe does good work she likes to have her employer know that she does. If she is one who cannot go ahead so well without direction, her work should come under supervision.

The person in charge, whether he be the proprietor of the business or the one employed to see that it is carried on, in order to make a success of the work, must have a well-laid plan of procedure always before him. He must be sure that all activities in association with it correspond with his plan.

That is my idea of a good executive.

Here and There in Telephone Work

Better Office Lighting Builds Better Telephone Business.

Nowadays it is to the advantage of every business to show its complete faith in the goods it is selling, or in the type of thing in which it is dealing. This is the case because if the concern demonstrates its complete faith in its offerings, the public has more confidence in the concern and feels more like making purchases from it.

Telephone companies, of course, show their complete faith in the goods they are selling by using telephones just as extensively as possible. And, too, because the telephone is a modern invention, many telephone companies show their faith in modern inventions by using modern things as extensively as possible in their businesses.

It would be considered a joke if a modern telephone company used kerosene lamps, for example, in its offices when electric current is available. But though no telephone companies are that antiquated, there are some which still use old-time electric lighting methods. Nowadays, you know, the idea is for bright lighting and if the telephone company is to show its faith in everything modern, it should go in for modern lighting. And if it does so, it will find its offices pepped up and business bettered accordingly.

It is really astonishing what a difference there is between good and bad office lighting. Look, for instance, at the accompanying "Before" and "After" pictures taken in the general offices of the Cincinnati & Suburban Bell Telephone Co., of Cincinnati, Ohio. Perhaps modern lighting would make a similarly remarkable and satisfactory change in other company offices.

Why not think it over and apply all this to your own office, Mr. Reader?

"Before" and "After" Views of General Offices of Cincinnati & Suburban Telephone Co., Illustrating Poor and Good Illumination.

The Magneto Exchange Repairman; The Ringer (Continued).

In the magneto telephone of the type called bridging, the ringer is connected from one side of the line circuit to the other. The word "bridged" or "bridging" as used in connection with telephone circuits, refers to the method of connecting any of the electrical devices between the two sides of the circuit.

Where party line selective ringing is in service, the ringers are connected between either side of the line and ground. Usually the practice is to connect the flexible ringer terminal wires to two binding posts in the telephone set in order that the various ringing combinations can be made.

Another feature about these binding posts is that the ringer can be easily separated from the line circuit for test purposes—that is, the ringer can be disconnected from the binding posts and connected to a test set; or, if a test set is not available, the ringer can be connected to the telephone set magneto generator and tested.

The principal faults which are liable to develop in a telephone set ringer are (1) Magnetic; (2) electrical, and (3) mechanical.

The magnetic faults may be classified as weak permanent magnet, loss of magnetism in the permanent magnet, and armature and electromagnet cores becoming magnetized.

The electrical faults are generally loose connections, short-circuits, open electromagnet windings, reversed windings, broken wires in the subscriber's set, line trouble, etc.

The mechanical faults are likely to be caused by factory defects, loose, broken or missing parts, or improper adjustment of the armature. Unless interfered with and thus thrown out of adjustment, the armature seldom requires attention. The clapper rod may be bent, or the clapper is too close to one gong. The clapper should be so adjusted that it will strike each gong, but does not remain in contact with the gong when the armature is held alternately in its extreme positions of movement—that is, first against one of the electromagnet core ends, and then the other.

About 1/64th of an inch is sufficient clearance between clapper and gong, and will result in a good clear ring.

Another cause of unsatisfactory ringer operation is due not to any fault in the ringer itself, but to connecting ringers having different electromagnet resistance in parallel on the same line. For example, suppose a line is equipped with telephone sets having ringers of mixed resistance, such as 1,000 ohms, 1,600 ohms and 2,500 ohms. In accordance with the law governing the flow of electricity, the ringers having the least resistance would absorb most of the current applied to the line, while the ringers of higher resistance would receive the smallest amount of current, resulting in a poor ring being obtained.

If on turning the magneto generator crank in the bridging telephone set, the armature of the ringer does not vibrate and the generator crank turns hard, it will probably indicate that the ringer electromagnet windings are either short-cir-

cuited or partially short-circuited; assuming, of course, that the ringer clapper is properly adjusted and is not being held rigid between the two gongs, also that the armature does not bind in the pivot screws.

If the ringer winding is open, it will be indicated by the easy movement of the generator crank when testing, and also by the failure of the ringer armature to vibrate.

In party-line telephone sets where the ringers are connected to ground, the foregoing test will equally apply, but it should be borne in mind that if the connection to earth, or ground as is most commonly termed, is broken, the ringer cannot operate.

Many cases of ringer troubles on magneto circuits where the lines are not protected with lightning arresters are caused by lightning and foreign currents (power and light circuits) which burn out the fine, insulated copper wire windings on the electromagnets. Usually where this occurs, no test of the ringer is necessary because of the odor of burned insulation.

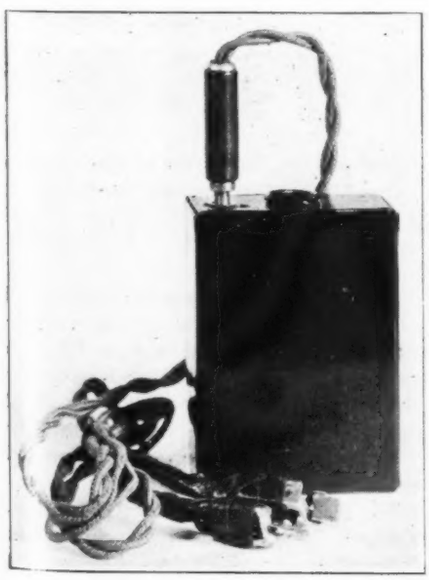
Where biasing springs are used to bias the armature of a ringer, it must be taken into account when the armature is adjusted, because in those magneto exchanges employing pulsating ringing current the tension of the biasing spring ought to be stronger than when only alternating current is used for ringing. The armature of all ringers should be set at right angles (straight across) to the electromagnet cores; the clapper and rod should be straight and at right angles to the armature and also free from contact with the woodwork of the telephone set.

Pocket Size Installer's and Troublemen's Tone Test.

The Lincoln Telephone & Telegraph Co. has adopted as standard equipment, a novel but very efficient pocket-size installer's and troubleman's tone test, the invention of George Barney, assistant general storekeeper. The new tone test is enclosed in a small black metal container, with current supplied by a flashlight battery. It was made up in January, and proved so efficient and at the same time so convenient that more than a hundred are now in use by the company.

The tester came as the development of an exchange of ideas between men at the warehouse who have been deploring the necessity of a man having to carry around with him the cumbersome piece of equipment so long in use, which got its power from dry batteries that were carried along and strapped to the main box.

The accompanying pictures will show the difference between the two pieces of equipment and also include one of Mr. Barney as he stands in the midst of the equipment over which he has charge.



The New Installer's and Troubleman's Tone Test Which Is Standard Equipment With the Lincoln Telephone & Telegraph Co., Lincoln, Nebr., With George Barney, Its Inventor, Who Is Assistant General Storekeeper for the Company. The Tone Test Formerly Used by the Lincoln Telephone & Telegraph Co.

Advertise Telephone Business in the Modern Way.

With such a strictly modern, up-to-the-minute business as the telephone industry, it is found advisable by telephone executives to advertise the business in the modern manner. In other words, it is good business to see to it that all publicity for the telephone company is strictly in harmony with the character of the business itself—up-to-the-minute, enterprising and progressive.

And this is the thought behind the use by the Southwestern Home Telephone Co., Redlands, Calif., of a statue on the lawn of its offices showing a view of a telephone with an image depicting the flash of words around the world when transmitted by the telephone. This statue naturally attracts much attention and is a distinct help to the company in showing the community that it is in perfect harmony at all points with the modern world.

Statue Symbolic of Telephone Service on Lawn in Front of Building of Southwestern Home Telephone Co., Redlands, Calif.

It pays the telephone company to publicize its business in a modern manner—even by the use of such striking new things as advertising statues.

Greatest Number of Residence Telephones on Family Basis.

According to figures compiled by H. L. Fentress, district manager at Omaha, Neb., for the Northwestern Bell Telephone Co., Omaha leads all other cities in the United States of over 200,000 population in the pro rata or per capita use of telephones in the home.

Mr. Fentress says that his compilation shows that the city has 72.2 telephones for every 100 families or one telephone for every 1⅓ families in the base area, which includes the city and suburbs, where the population, based on the last census estimates and directory figures, is 232,000.

Independents' PBX in Independence Hall

Intercommunicating Telephone System Installed in Independence Hall, Philadelphia, Pa., by Keystone Telephone Co. for Supplementing Facilities for Protecting Heirlooms of National Historical Interest Kept in Famous Building

By I. D. Gindhart, Jr.,
Commercial Manager, Keystone Telephone System, Philadelphia, Pa.

"Shades of Washington, Jefferson and Adams, Independence Hall at Philadelphia is equipped with a modern telephone system!"

Throughout the entire historic building, the Shrine of American Liberty, craftsmen of the Keystone Telephone Co., Philadelphia, Pa., have woven the wires skillfully and mounted the telephones carefully. Finally, when all was ready, they cut into service the first private branch exchange installed in the building where the Declaration of Independence was signed and where George Washington was inaugurated president of the United States.

In the room where the original Congress of the United States convened in 1790, there has been placed a neat 20th Century wall set, standing ready to contribute its part in assisting the guards to watch over the priceless treasures that tell the story of the history of our nation.

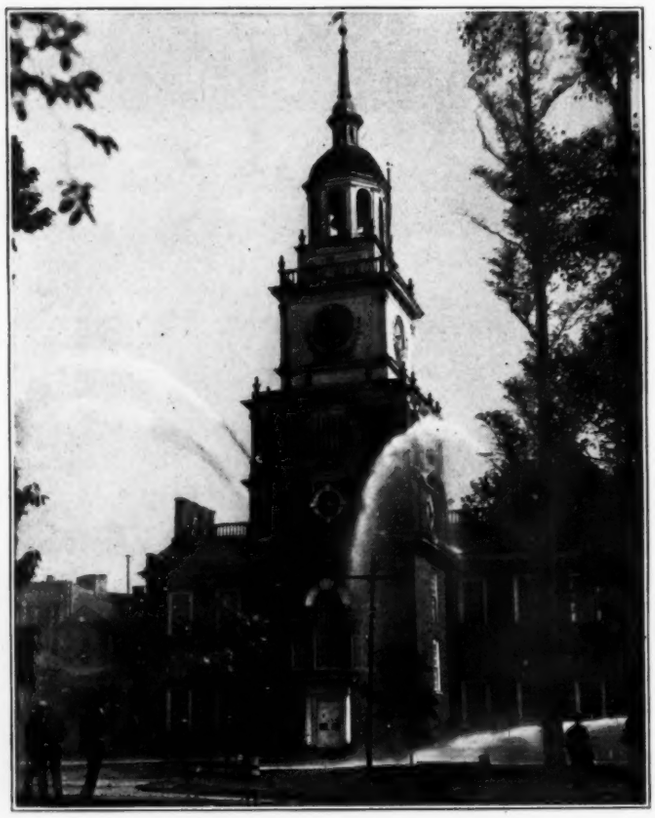
In the companion building where the he, with his associate justices, debated Supreme Court of the United States held its judicial sessions, the Keystone workmen have ingeniously hidden away a telephone. Inconspicuous as it appears, it overlooks the raised platform on which the Chief Justice of the United States sat as upon those momentous questions that faced the colonists. Here, too, the councils of the city of Philadelphia held their sessions. Although the city was small in those days, the local government faced many problems of importance.

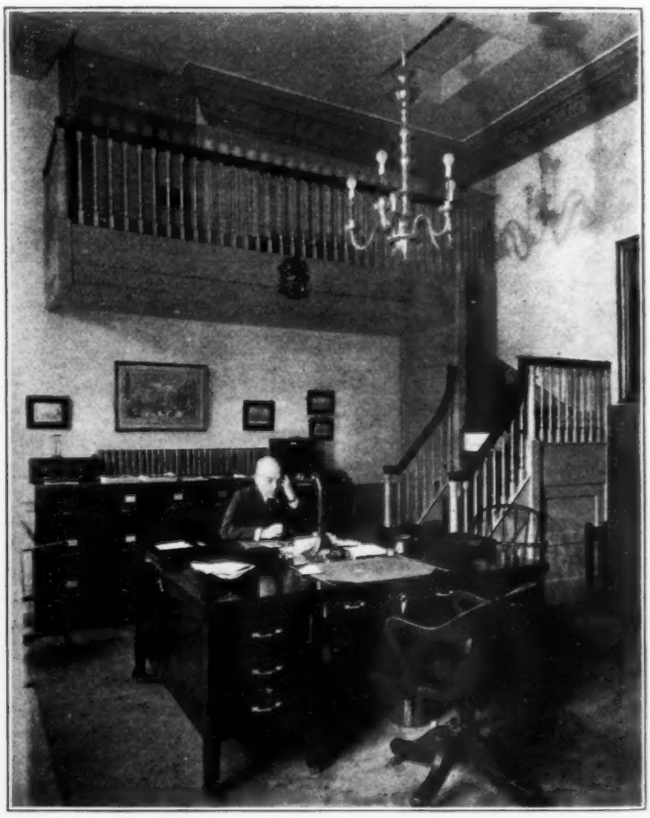
Washington's inaugural address was delivered from Congress Hall where magnificent paintings today occupy the room. These works of art immediately bring to the mind of the visitor the story of the drama of those early days. The painter with great fidelity shows in one of the canvasses the brilliance of the President's reception, resplendent with beautiful ladies and gallant gentlemen. In nearby contrast to this luxurious life the artist's brush shows us Washington at Valley Forge.

Not far from the splendid art work in this room and its precious documents of 150 years ago, there appears a telephone, the mere ringing of its bell quickly summoning a guard. The city of Philadelphia has spared no money in its guardianship of the Liberty Bell, the flags of the States, the original copies of manuscripts as well as the relics and furniture of the Revolutionary period.

Special uniformed guards are stationed in every room to keep watch on the souvenir-hunting zealot, and to keep an ever alert eye upon those who lack respect or who would despoil the things held sacred. In addition to these guards, the city has now installed a supplemental means of protection—the telephone.

The special intercommunicating system, installed in the group of buildings, was designed by Frank Maize, chief of the





Fire Drill at Independence Hall; a Keystone Telephone Was Used to Call Out the Philadelphia Fire Department for Fire Drill Which Insures Independence Hall Against Destructive Fires.—Executive Office of Wilfred Jordan, Curator of Independence Hall; This Room Was Used During the Stirring Days of Early American History as the Private Office of John Adams, the First of the Vice-Presidents of the United States.

electrical bureau of the city of Philadelphia with the cooperation of Wilfred Jordan, curator of Independence Hall, and Keystone Telephone Co., engineers. Not only is every room in the various buildings equipped to spread an alarm in case of theft or fire, but a complete patrol system for the night watchmen, places them in constant communication with the electrical bureau at the city hall at all hours of the night.

Thus, the irreplaceable and not purchasable national heirlooms that have been placed in the custody of the city of Philadelphia are protected. By such a complete system of patrols and communication systems, they will ever be preserved so that the citizens of the United States and visitors from other nations may visit Independence Hall and view the objects that, mute though they be, speak louder than tongues of men, of the glory of their day.

Curator Jordan was kind enough to give "leave to print" the accompanying letter. This, together with photographs showing the interior of a room of one of the buildings, and a scene of a fire drill, intended to protect the buildings against loss by fire—are of interest to TELEPHONY's readers who are interested in matters pertaining to the historic Independence Hall in Philadelphia, the Cradle of Liberty.

INDEPENDENCE HALL
NATIONAL MUSEUM
PHILADELPHIA

May 9, 1929.

Mr. J. K. Stockwell, Vice-President,
Keystone Telephone Co.,
135 S. 2nd Street,
Philadelphia.

My dear Mr. Stockwell:

We have just had installed in the Independence Hall group of buildings an intercommunicating Keystone telephone system.

Owing to the age of these buildings, their historical and architectural importance, we were anxious that the work be done in as neat and careful a manner as possible, and I so impressed your foreman and the men working here under him.

We are so pleased with the way this whole job has been handled by your company that I wanted to write you this note commending your men.

With kind personal regards,

Very truly yours,

WILFRED JORDAN,
Curator, Independence Hall.

Letter From Curator Jordan of Independence Hall Commending Workmanship on the Installation of the Keystone Intercommunicating Telephone System.

Telephone Service and Employes Commended by Legislature.

By unanimous consent, the following resolution offered by Representative Kennedy, was read and adopted by the House of Representatives of the 55th General Assembly of Missouri, which session just recently adjourned:

"Whereas, During this session of the legislature, the Southwestern Bell Telephone Co. and the Capital City Telephone Co. have for the convenience of the members and without cost to the state maintained an exchange in this building for local and long distance telephone connections, placing in charge thereof F. V. Crawford, district manager, and a corps of efficient and courteous operators and messengers; which service greatly facilitated the business of the members and is highly appreciated by them.

Therefore Be It Resolved, That the House extend to said companies and to the persons employed in this work during the session, our thanks for their efficient efforts and uniform courtesy; and,

Be It Further Resolved, That the chief clerk of the House send a copy of this resolution to each of said companies and to the manager of the exchange in this building and that this resolution be printed in the journal of the House."

The requirements of a session of this kind are very exacting and a commendation of this kind after a 150-day session is worthy of mention.

Prices in the Metal Markets.

New York, June 10.—Copper—Steady; electrolytic spot and future, 18c. Tin—Firmer; spot, $44.75@45.00; futures, $45.25@45.50. Lead—Steady; spot New York, $7.00; East St. Louis, $6.80 per 100 lbs. Zinc—Steady; East St. Louis, spot and future, $6.60 per 100 lbs.

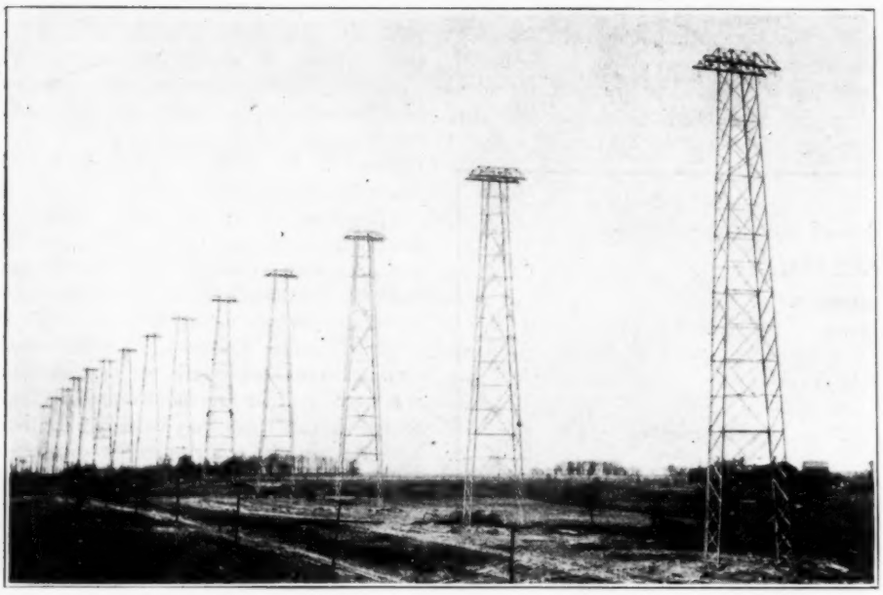
National Association Announces Annual Convention Dates.

The annual convention of the United States Independent Telephone Association is to be held October 22-25 in Chicago. A change has been made in the place where it is to be held and the Stevens Hotel has been selected. It is believed that the facilities and the arrangements for the exhibits will be more satisfactory than at other previous conventions. More and better exhibits are expected this year than ever before due to the greater space.

Government Issues Instructions Curtailing Telephone Costs.

In order to conserve expenditures of public funds for telephone service the heads of the federal government organizations are requested to make, from time to time, surveys of telephone service necessary to conduct their activities in the most efficient manner. The minimum number of telephones necessary should be contracted for, a recent bulletin (No. 105) says. The importance of a careful check on bills for local, and total service is emphasized. An exact check for toll messages and other telephone facilities exclusive of local calls is necessary.

With a few exceptions the departments and independent establishments in the District of Columbia obtain telephone service by private exchanges which are operated either by manual or automatic switchboards. The question of operating personnel and operating methods to properly con-



Towers Supporting the Antennae Used in Transmitting to England From the New Short Wave Radio Transmitting Center of the A. T. & T. Co. at Lawrenceville, N. J.

duct such service is partly administrative and partly engineering.

Routine methods which have already been established for handlng long distance calls, and for the collection of public telephone commissions, will be continued. The use of hand-set telephones must not be encouraged except where they are absolutely necessary to the efficient conduct of business.

In planning for service in the District of Columbia the individual departments and establishments must arrange for telephone service to meet their needs, keeping in mind the service necessary to coordinate their needs with those of other activities. The Bureau of Standards has undertaken a study of the service necessary to meet present and future requirements of the federal government in the District of Columbia and in the field.

In many cities throughout the country there are federal buildings housing two or more government activities. As a general rule the various activities housed in one building can be most advantageously served by a single private branch exchange rendering joint service to all. It is mandatory upon the activities housed in such federal buildings to avail themselves of this joint service, except when such joint service is not in all respects to the interest of the government, when other arrangements may be made with the approval of the chief coordinator.

Short-Wave Transmitting Center for Transatlantic Service.

A telephone conversation between London, England, and Cleveland, Ohio, handled successfully through the Lawrenceville, N. J., short-wave transmitter of the American Telephone & Telegraph Co., Saturday morning, June 1, marked the commercial opening of the Bell system's new short-wave radio telephone transmitting center. In future all transatlantic short-wave radio messages passing over Bell system wires in America will be transmitted through the new radio plant.

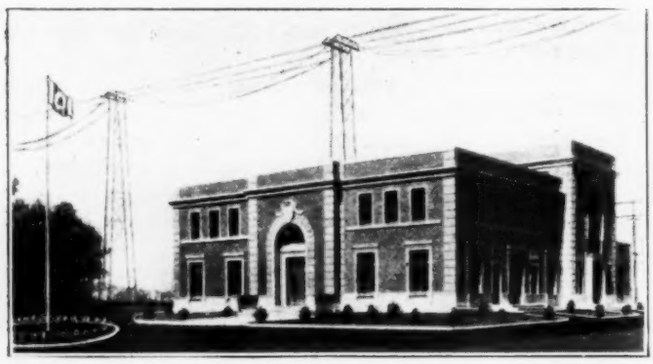
The initial unit of the new transmitting center has been performing smoothly since the opening day. By the end of the year it is expected that the transmitters of two additional short-wave channels to Europe, and one to Buenos Aires, Argentina, will be operating from this point. The present short-wave transmitter at Deal, N. J., will then be taken out of commercial operation, to be used thereafter for experimental purposes.

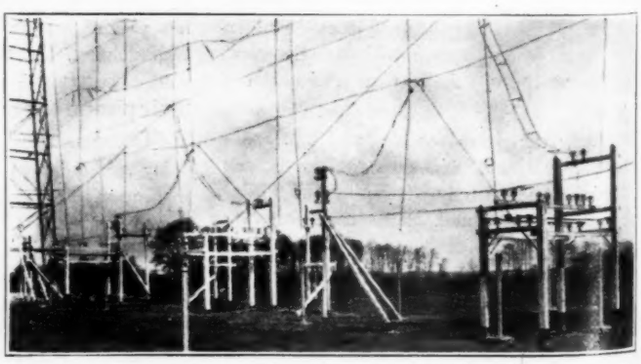
Equipment is being installed and tested in England and in South America to take care of the proposed new channels. At the same time preparations are being pushed forward at Lawrenceville and at Netcong, N. J., the short-wave receiving center in this country, which began operating last summer.

Providing a third transatlantic speech channel, the new short-wave unit supplements the long-wave and short-wave systems previously operating between the United States and Europe. With a continually expanding volume of overseas conversations, reaching its high point last month, the two systems were becoming congested. The third channel will relieve this situation and furnish ample room for additional growth until the fourth system is brought into service.

As the result of months of experiment and testing by engineers of the A. T. & T. Co. and the Bell Telephone Laboratories, Inc., the sending equipment at Lawrenceville presents a number of improvements over that in the older short-wave system. The transmitting antenna for Europe are strung on a line of 19 180-foot steel towers, placed 250 feet apart and at right angles to the direction the voice waves travel. Each of the three transatlantic channels has three horizontal aerials, paralleling each other perpendicularly; connected by cross wires, they resemble a huge wire net of irregular mesh.

Behind the transmitting antenna is a second, similar arrangement, designed to reflect the voice waves from the transmitting antenna, and to reinforce them. As the equipment is directional, the energy is thus focused toward the point it is to reach. At the same time, each antenna can transmit on three different wave lengths, so that when all the channels are completed they will be able to operate simultaneously without interfering.





Main Building of New Short Wave Radio Telephone Transmitting Center of A. T. & T. Co. at Lawrenceville, N. J. It Contains Two of the Transmitters, Offices and Machine Shop.—Part of Antenna Curtain in One of the "Bays" Showing Apparatus Connecting the Antenna With the Transmission Line From the Radio Transmitter.

Strowger

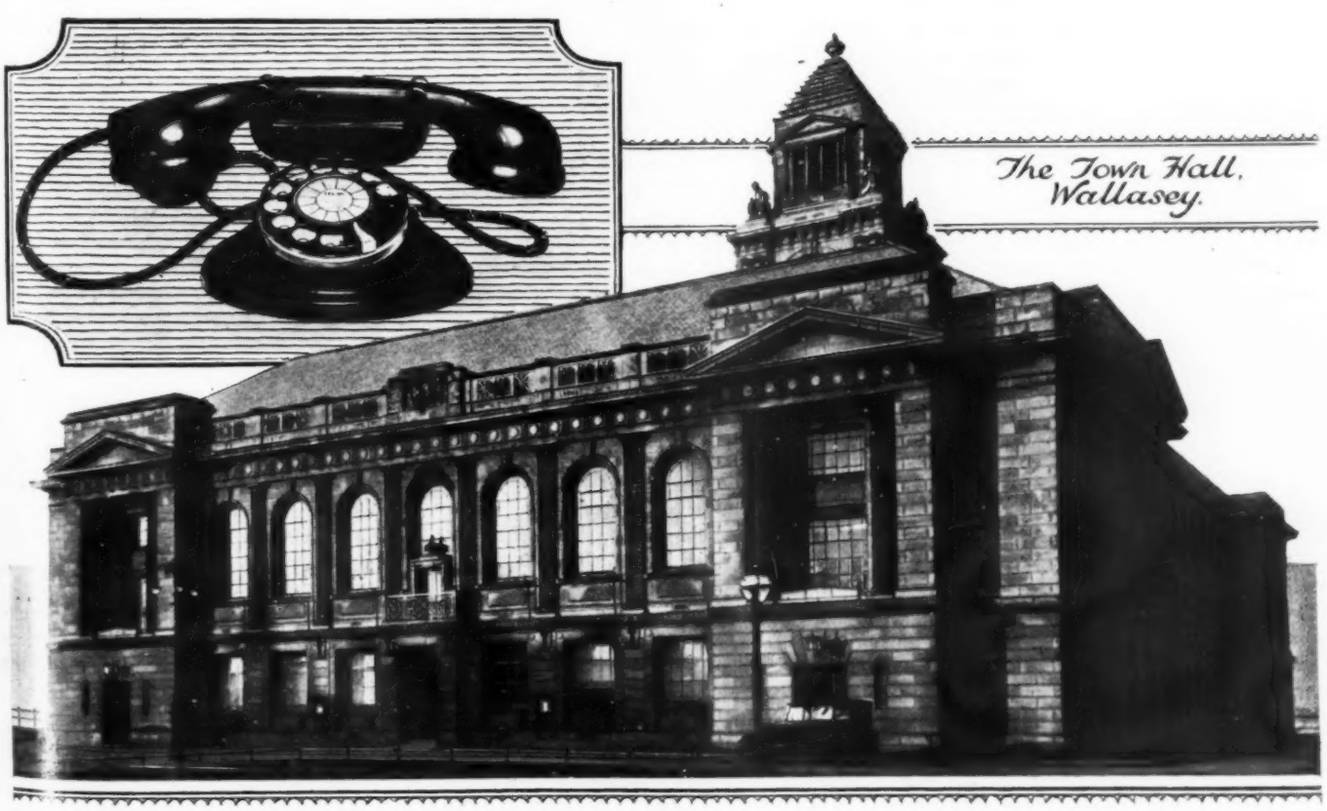
Saves Public Money

THE urban district of Wallasey, on the Cheshire side of the Mersey, possesses an irresistible attraction for the commercial and industrial population of Lancashire and Merseyside.

Largely residential, its splendid promenade and sea-wall protecting the Wirral coast, afford boundless space and opportunity for recreation, of which full advantage is taken by workers from the most densely populated industrial area in the world.

Alive to the important part played by the district in the maintenance of public health and well-being, the Wallasey Corporation displays commendable enterprise. The progressive spirit of that body is well exemplified in the equipment of its fine Town Hall with Strowger Dial Telephones.

Automatic Telephone Manufacturing Company, Ltd.
Strowger Works, Liverpool, England
ASSOCIATED, COMPANY
International Automatic Telephone Co., Ltd., London



The Town Hall, Wallasey.

Unification of Wire and Wireless Urged

Head of International Telephone & Telegraph Co. at Hearing on Federal Communications Bill Before Senate Committee Advocates Repeal of Law Restricting Mergers—Lower Foreign Rates Claimed—Navy Payments for Radio Patents

Contracts between the Navy Department and the Federal Telegraph Co. of California, involving the radio patent rights of that company, their purchase by the government for $1,600,000 and subsequent return without monetary consideration, were discussed June 5, before the Senate interstate commerce committee, in the course of hearings on the Couzens bill (S. 6), to provide for a permanent communication commission.

Lieutenant Commander Harold Dodd, in charge of the patent section of the Judge Advocate General's office, and the solicitor for the Navy Department, Pickens Neagle, testified regarding these contracts, the first of which was made by the Secretary of the Navy, Josephus Daniels, on May 15, 1918, and the second by the Secretary of the Navy, Charles Denby, on March 19, 1921.

The only other witness was Commissioner Harold A. Lafount, of the Federal Radio Commission, who, addressing himself to the Couzens bill, said he favored a communications commission but did not think it should also handle power transmission, as contemplated in an amendment proposed by its author and committee chairman, Senator Couzens of Michigan.

Necessity for Commission.

"A communications commission is not only advisable but actually needed," he said. "I do not think it necessary to include power except so far as communication of power lines is concerned.

"At this time my opinion is that power could better be handled elsewhere. It would broaden the scope of the commission so much and make such a tremendous task, I am not at all sure it is advisable."

For continental communication, wire and wireless communication could advantageously be combined, said the witness, but he saw no particular advantage in combining cable and radio services, nor could he see any reason for prohibiting broadcasting licenses of companies engaged in manufacturing radio apparatus.

Repeal of provisions of law which forbid the merging of wire and wireless companies, because the coordinated development of wire, wireless and cable communications "will result in incalculable benefit to the American people in their economic and social welfare as well as in the encouragement of international intercourse and trade," was advocated on June 7 by Sosthenes Behn, chairman of the International Telephone & Telegraph Corp.

"Whether the powers of the Interstate Commerce Commission be continued or the proposed communications commission be established," said he, "it is my belief that the consolidation of wire, wireless and cable companies should not only be permitted, but even encouraged; that such consolidations are necessary to promote to the fullest extent the development of telegraph and cable and wireless services; that such development will result in incalculable benefit to the American people in their national economic and social welfare as well as in the encouragement of international intercourse and trade, and that it is essential that American communication services be placed on at least an equal footing with the coordinated foreign communications services.

Mergers Should Be Permitted.

"Therefore, the necessary authority should be granted to permit of such mergers of wire companies as well as wire and wireless companies, providing such mergers will not result in increased rates for the services rendered."

Colonel Behn described the accord reached between his company and R. C. A. Communications, Inc., by which the R. C. A. point-to-point communications system would be acquired. At the present market value of the stock that would be turned over to the R. C. A. Corp., the transaction would involve $100,000,000, he said, although actually 400,000 shares of I. T. & T. stock with a par value of $100 per share would be paid.

Colonel Behn explained that section 17 of the radio act of 1927 prohibits a transaction of the character contemplated by the I. T. & T. and the R. C. A. Urging repeal of this provision, he said, it is essential that American communications services be placed on at least an equal footing with the coordinated foreign communications services.

"I think I can vouchsafe to you gentlement that almost an immediate reduction in rates of 10 per cent, if not more, will be effected, after the period of readjustment following the consolidation," he said.

Under examination by committee members, Colonel Behn explained that the I. T. & T. is a holding company, which has some 30 subsidiaries in South America and Europe. The Mackay systems, including the Postal Telegraph Co., All-America Cables, Mackay Radio & Telegraph Co., and others, he said, are a part of the I. T. & T. organization.

"We are developing an international communications service, especially in Pan America," said Colonel Behn. "We will have a very complete communications service in South America, including wire, wireless, cable, and pick-up and delivery service."

In addition to these services, said the witness, the company has telephone concessions in Argentina, Chile, Brazil, Peru, Ecuador and Colombia, and is negotiating for more in other countries, while in Europe it owns 80 per cent of the Spanish telephone system.

The I. T. & T. plans to lay a telephone cable, he said 6,000 miles long, going to the east coast of South America.

"We will have encircled South America on the east and the west, with radio supplementing this service," he explained.

By August 1, he said, South America will be in direct wire communication with western Europe, and by February 1 of next year the I. T. & T. will have telephone service between North America and Brazil, Argentina, Uruguay and Chile.

Such services, continued Colonel Behn, are made possible by coordination of communications.

"A communications service must have all facilities at its disposal. For that reason, we have gone into radio, cables, and land lines. There even is some talk of going into airplanes," he said.

Organization of I. T. & T.

The I. T. & T., which was organized in 1920, Colonel Behn explained, operates in 30 foreign countries, and as of March 31 had a capital of $167,000,000. The original amount invested, he said, was $6,000,000.

Colonel Behn said the actual investment of R. C. A. is about $25,000,000, while the I. T. & T. is giving $40,000,000 of its stock for it, including the R. C. A.'s contractual relations with foreign countries and companies and its patent holdings.

The I. T. & T. has no direct connection with the American Telephone & Telegraph Co., said the witness, but has some working arrangements. It likewise has no present affiliation with the R. C. A.

"That the government has the right and should at all times reserve such right to regulate rates for these services (telegraph, cable and wireless) there can be no question," Colonel Behn said.

"I believe that the retention of the existing powers of the Interstate Commerce Commission, with the continuation of the present radio commission, would be adequate for the immediate future, although it may be found that it would later be ad-

(*Please turn to page* 29.)

UNIFICATION OF WIRE AND WIRELESS URGED

(*Concluded from page* 24.)

visable to segregate from the Interstate Commerce Commission, into a special communications commission, the control and supervision of communication services.

The legislation and regulations covering the control of wire and wireless services should permit of their merger or association, providing such arrangements do not result in increased rates. I am firmly of the opinion that if such mergers are permitted there will not be any attempt to increase rates, but, on the contrary, through the economies which will be brought about and the elimination of unnecessary duplication of plant, the tendency will be to reduce rates and increase the volume of traffic. This should be ample safeguard to the public interests.

If, on the other hand, mergers are not permitted, the result is clear that rates will most likely be maintained substantially as they are and that reductions will be grudgingly made because of increasing separate heavy capital investments and maintenance and general administration charges.

The policy of our government in preventing mergers, especially between companies rendering cable and wireless service, is in singular contrast to that of other governments holding an equally important position in the international communications field. There is no country in the world except ours, having extensive interests in international communications, where there is legislation prohibiting amalgamation of cable and wireless services.

We feel that it is evident that if this country is to hold its own in the field of foreign communication, its policy must permit of mergers between American companies furnishing foreign communications and encourage them, just as in the Webb-Pomerene act Congress decided to encourage and permit consolidations in the export of commodities."

The committee has received a letter from Col. Manton Davis, vice-president and general attorney of the Radio Corp. of America, in which it is stated that the records of the federal courts contain "unanswerable refutations" of the testimony recently given before the committee that the Alexanderson tuned radio frequency patent of the R. C. A. would have been forced to give way to the Von Bronk patent, had the government seen fit to assert its rights.

Colonel Davis' statement was primarily in reply to the testimony of Colonel J. I. McMullen, of the Judge Advocate General's office of the Army. The committee, during the course of these hearings, is inquiring into alleged failure of the government to assert its patent rights as against those of the industry, notably the R. C. A.

Colonel McMullin said that the Schloemilch-Von Bronk patents, seized by the United States from Germany just before the Armistice, "anticipated" the Alexanderson patent of the R. C. A. He said that the two decisions of the federal district courts, upholding the Alexanderson device, were "rather a put-up job" to have the R. C. A. device validated over the Von Bronk. The Alexanderson patent, he charged, had been upheld "in a sort of left-handed way."

In his letter Colonel Davis declared it was not the disposition of his company to respond "piece-meal" to attacks, but to await orderly opportunity to be heard. "It seemed to us, however, that these statements and insinuations, which concern not only our organization but the Department of Justice as well, required early answer and the bringing before interested senators of unanswerable refutations written in the records of the United States Federal Courts."

The committee adjourned on June 7, subject to call of the chairman.

Asks Investigation of Radio Companies Commission.

Resolutions adopted by the Radio Protective Association, representing independent radio manufacturers, seeking to have the President's law enforcement commission investigate "the apparent immunity from prosecution enjoyed by the radio trust," were forwarded on June 8 to the White House by Oswald F. Schuette, executive secretary of the association. The resolutions, passed unanimously at the annual meeting of the association, follow:

"Whereas, The Radio Corp. of America, the American Telephone & Telegraph Co., the General Electric Co., the Westinghouse Electric & Mfg. Co., and the United Fruit Co., with aggregate resources of $5,000,000,000, have undertaken to create an unlawful monopoly in the radio industry, and

Whereas, Said radio trust has sought to destroy its competitors and to control every phase of the art of radio, including communications, broadcasting, manufacture, television and the talking movies; and

Whereas, This attempted monopoly of the greatest means of mass communication known to man is a menace to the safety of the republic; and

Whereas, The unpunished violations of the antitrust laws by such a combination of rich and powerful corporations, and their offenses against independent competitors, tend to bring all laws into disrepute and to encourage lawbreaking by less wealthy and less powerful individuals and corporations,

Therefore, Be it resolved, by the Radio Protective Association as the representative of the independent radio industry of America, assembled in annual convention in Chicago, that it respectfully petition the Honorable Herbert Hoover, President of the United States, to direct the law enforcement commission, recently appointed by him, to investigate the apparent immunity from prosecution enjoyed by the radio trust."

Communications Bill Amendments Propose Including Power.

On June 4, Senator Couzens of Michigan, chairman of the interstate commerce committee, introduced an amendment to his bill for the creation of a Federal Communications Commission (S. 6) to give the proposed commission jurisdiction over rates and service of power companies operating interstate and to transfer to the new commission the jurisdiction now exercised by the Federal Power Commission.

The amendments Senator Couzens offered to his communications commission bill would change the name of that proposed organization to the "Commission on Communications and Power" and would add two new sections to the bill; one of which would give the new commission jurisdiction over rates and services of interstate power companies, and the other of which would provide for a transfer of the functions of the present Federal Power Commission to the proposed commission on communications and power.

Radio Commission Allocates Transcontinental Short Waves.

The Federal Radio Commission on June 8 allocated 12 cleared short-wave transcontinental communication channels and five that are shared with Canada. R. C. A. Communications, Inc., subsidiary of the Radio Corp. of America, received ten cleared channels and the five shared with Canada, and the Western Radio Telegraph Co. of Bartlesville, Okla., two cleared channels. Commissioners Robinson and Saltzman voted against the allocations.

The commission has reserved no channels except the 20 short waves put aside for the press. No action was taken on the press allocations, this matter being turned over to the legal division of the commission for a decision as to whether the press was allocated these short waves in a former action of the commission. A report is asked by June 19.

The Mackay Radio Telegraph Co. did not receive additional communication channels, but it has five.

At the last transcontinental communication hearing the Radio corporation asked for an assignment of 30 channels, the Intercity Radio Telegraph Co. of Cleveland, for 30, the Mackay system for 21, the Wireless Telegraph & Communication Co. for 12, and the Western Radio Telegraph Co. for 9. To the Universal Wireless Communications Co., Inc., had been allocated 40 short waves.

How to Correct Transmission Troubles

Discussion of Transmission Troubles Which Should Be Corrected by Maintenance—Essentials of Good Transmission—Problems of Common Battery and Magneto Plants—Address Given at Convention of Pennsylvania Association

By Harry N. Faris,

Telephone Consultant & Technical Engineer, Public Utilities Dept., United Trust Co., Abilene, Kans.

Transmission troubles can be called a plant subject of first importance for, as someone has said, "Transmission is what telephony is all about"; and we know of no state or section where transmission could not be greatly improved through better maintenance practices.

The scope of the subject being so broad as to preclude complete discussion in the time allotted, we shall assume that all are familiar with the nature and sources of transmission trouble, and try to describe the remedial practices which have proved most effective.

Further simplification will result if we distinguish between transmission troubles due to improper maintenance and transmission deficiencies due to improper equipment or toll lines. To get the best practicable service from existing facilities is the plain duty of maintenance forces, but with their labors must be coupled a managerial effort to "grade up" equipment and lines to overcome deficiencies which maintenance alone cannot make good.

We shall first discuss, as more important, those transmission troubles which should be corrected by maintenance and, we may discuss briefly the "grading up" of facilities.

As the essentials of good transmission we shall classify three equipment and three line requirements as follows:

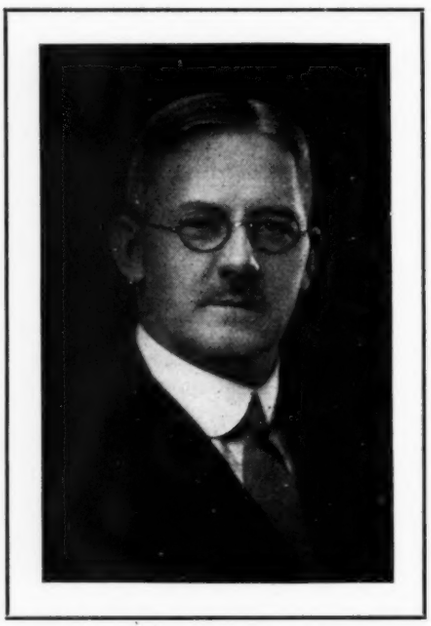
1. Proper subscribers' station equipment.
2. Efficient cord circuits.
3. Good line repeating coils, for phantom groups.
4. Ample line conductivity.
5. Good insulation.
6. Freedom from crosstalk and inductive disturbances.

While it would be very desirable to discuss magneto and common battery plants separately, it will not be possible to do so and the indulgence of each group is asked while problems peculiar to the other group are being discussed.

Subscribers' Transmitters.

All patrons should have, and long haul toll users must have, good transmitters, receivers and induction coils. In the Independent field, transmitters are not changed with sufficient frequency and greater advantage should be taken of the manufacturers' repair or exchange service. Transmitter repairs and even the renewal of old rubber gaskets should not be attempted outside the factory-equipped shop.

This is particularly true of local battery transmitters for, while anyone can reassemble such a transmitter with good talking results, there is no assurance that such results do not involve undue current consumption and, in automobile language, having no means of checking our "carburetor adjustment" we may be set for only 8 miles per gallon instead of 18, which is the worst of false economy.



"To Get the Best Practicable Service From Existing Facilities Is the Plain Duty of Maintenance Forces," Says Mr. Faris, "But With Their Labors Must Be Coupled a Managerial Effort to 'Grade Up' Equipment and Lines to Overcome Deficiencies Which Maintenance Alone Cannot Make Good."

The conscientious manufacturer, or factory-equipped repair shop, will either put in new granules and new electrodes, or renew the carbon and regrind the electrodes, in either case returning the equivalent of a new transmitter. But the mere renickeling of a transmitter and its reassembly with the same carbon or the same electrodes, improves service and increases transmitter life no more than would a mere change of rubber gasket.

Local battery transmitters should be changed when they will no longer give strong side tone with the line posts short circuited after battery renewal. The transmitter should also be able to "howl" a good receiver, on this same test, regardless of battery polarity.

Local battery transmitters with a working average resistance above 40 ohms really require three dry cells and, while two dry cells are the general practice of Independent companies, all toll users' desk sets should be provided with three cells and all toll users' wall sets should have transmitter resistance held down to 40 ohms for proper results with two cells. It is essential to keep three cells on local battery desk sets because these are tilted back into horizontal position while listening which renders the transmitter too high in resistance to respond promptly to two dry cells when restored to talking position.

The general trend seems to be toward a universal transmitter of intermediate resistance suitable for both local and common battery work. This means the same transmitter can be used for maintenance on both city and rural lines. But few Independent companies have such large areas with 24-gauge cable as to require zoning for the use of special high resistance transmitters in outlying districts; and since the lower resistance transmitters will "stand punishment" much better on short common battery loops, we believe an intermediate or universal transmitter should be generally adopted by Independent companies, and transmitters sent in for repair should be rebuilt into such universal type.

Care must be used, however, not to equip local battery telephones with "C" transmitters of the old high resistance type and manufacturers who have not already done so should be urged to adopt distinctive markings whereby their universal transmitter can be distinguished from the older and higher resistance types.

Common battery transmitters will stand a much greater range in resistance than will local battery, but the first essential to service improvement in the average common battery exchange is to weed out the excessively high resistance transmitters. Cord circuit design and battery voltage determine how high transmitters can go and still give commercial service.

An old high resistance transmitter which may appear fully efficient on a 40 or 48-volt, high impedance, condenser type cord circuit, or on a similar machine switching feed, will show only about half efficiency on a Bell type 24-volt local cord circuit; will be almost gone on a 6-volt "Intercomm" system, and will show entirely dead if tested with two dry cells on a local battery telephone. Replace this with a

good 40-ohm transmitter and the latter will show full volume and equally good quality on all four conditions.

So it would appear that the real problem is to weed out the ultra-high common battery transmitters and not allow any to go bavk into service showing over 100 ohms on the low voltage, minimum current condition. Nor should we worry about new common battery transmitters being too low in resistance. The tendency of all transmitters is to go high in service and, since a common battery transmitter delivers its best results between 40 and 50 ohms, we should not be averse to getting transmitters slightly below their prime but which will grow better in service and possess a longer life.

Transmitter resistance cannot be measured with a bridge, as we are only concerned with such resistance under certain battery potentials on local battery and under certain current flows in common battery. Such measurements can best be made with a milliammeter which should be graduated in ohms also for fixed battery potentials.

Transmitters for local battery may also be tested with two dry cells and a 200 to 375-ohm volt-ohmmeter shunted to one-tenth of its normal resistance. Such a meter when cut into the link wire between two new dry cells reads the transmitter resistance under the approximate current flow which will obtain when the two cells reach the "cut-off point" of 1.8 volts, or 0.9 volt per cell.

This latter test is also used in many shops to determine the resistance of transmitters for common battery work but in the latter case the regular battery voltage should also be applied through standard battery feeds and the milliamperes noted, with or without reducing to transmitter ohms. This full voltage test will locate many noisy transmitters which the low voltage test would not reveal.

Most low resistance transmitters which have risen to 100 ohms or more on low voltage will be found noisy on high voltage, but even in the absence of noise such transmitters should not be returned to service until sent in for repair. It should be borne in mind that the local battery test is the more severe and that any transmitter meeting the local battery test will be good and long-lived in common battery service, but that many transmitters performing satisfactorily on common battery will be almost inoperative on local battery.

Receivers.

Receivers fortunately do not offer so great a problem as transmitters. The present discussion will be limited to those of the permanent magnet type. All receivers suitable to be left in service have a resistance of 50 to 120 ohms and any below 50 ohms should be discarded, as these were intended for special circuits no longer in general use.

Even more important than direct current resistance is the matter of air gap which should be within the limits of 10 to 17 mils, since the largest gap intentionally left in modern times is 15 mils and the smallest about 12 mils. Because of the law of inverse squares, any gap larger than 17 mils will result in low volume while with any gap less than 10 mils the diaphragm is likely to "freeze."

Attention should also be given to getting the newer types of cone-cap receivers shifted to toll users' telephones, leaving the older flat-cap receivers for those who use toll service less frequently. By pressing a flat-cap receiver closely to his ear the toll patron almost closes up the acoustic passage while with the cone-cap receiver this cannot happen.

We might also consider a further improvement in transmission by keeping the patron closer to the telephone with a 30-inch receiver cord. The present 3-foot cord contemplated a long transmitter arm and a mouthpiece some 12 or 14 inches from the wall. With modern equipment the patron can wander as far from the transmitter with a 30-inch cord as he formerly could with a 36-inch cord, and dry cell consumption records in magneto plants show that a material saving, with better transmission, can be had by shortening receiver cords to 30 inches.

Induction Coils—Common Battery.

The commercial success of the local battery telephone dates from the induction coil circuit. Common battery telephones were not considered suitable for long distance until after the induction coil had been introduced, when it was discovered that by reversing one of the windings of the original circuit a powerful local battery effect could be superimposed on the common battery effect. This has come down to us through the years as the common battery "booster" circuit. It is generally agreed that of the eight or nine common battery telephone circuits which the art has developed, this is the one really suitable for long distance work.

It must not be assumed however, that all common battery telephones fitted with induction coils are booster sets. The circuit as well as the coil must be right. The two windings must aid inductively when tandemed, though the terminal numbering of 1-2—4-3 would indicate a non-inductive tandem hitch. Not being "wise" to this requirement of one winding being internally reversed has caused many failures to attain booster circuit results.

Many existing telephones can be shop changed to the booster type. New coils need not be purchased if old ones have large cores with winding ratios between 1 to 1 and 1.5 to 1. A conversion circuit must be worked out and carefully adhered to in changing each type of telephone. A simple final test which never fails to show whether or not the booster circuit has been attained is as follows: Connect two or three dry cells in series to the line posts of the telephone. In case the booster circuit has been attained the set will howl the same as a good local battery telephone on short circuit, while with the wires reversed at either pair of induction coil terminals the set will refuse to howl.

In shop-wiring telephones to the booster type it is of course necessary to bring the condenser into the talking circuit. Fortunately any condenser of one to two microfarad capacity, used in the bell circuit, is suitable for wiring into the talking circuit to add a local battery effect and secure the necessary "boost."

Induction Coils—Local Battery.

In local battery sets a proper type of induction coil is just as important for long distance users as a good transmitter and a good receiver. Local battery induction coils in service will be found to have primaries of from ⅓ to 2 ohms and secondaries of from 13 to 500 ohms while secondaries of 150 to 175 ohms were still being marketed up to two years ago.

Fortunately this secondary resistance spread of nearly 1,400 per cent in late-type sets does not indicate a corresponding variation in efficiency, as the more important matter of ratios has always remained between three to one and ten to one. In general, any local battery induction coil with a higher ratio than seven to one is not suitable for long distance work and toll users sets should be fitted, as rapidly as possible, with induction coils having ratios around four to one. This is easily accomplished if late type coils, purchased for lightning burnouts, are installed in toll users' telephones and the removed coils used to replace rural burnouts where a high ratio coil has the advantage of a lower bridge loss when the rural patron listens in.

In general, any local battery induction coil with a coarse wire primary or a secondary higher than 20 ohms is not fully efficient for long distance work.

When wiring "ring-through" condensers into the secondary circuit of rural telephones, preference should be given to condensers of one microfarad capacity which accomplish the desired ring-through function without impairing transmission.

Proper Desk-Set Hookups.

In addition to good transmitters, receivers and induction coils, it is of course necessary that proper circuits be used and maintained. In the case of wall sets this presents but little difficulty as the factory or shop-tested circuit is not likely to be disturbed in future transmitter and receiver cord replacements.

But in the case of desk sets each cord replacement is an opportunity for circuit misarrangement. TELEPHONY for May 11, 1929, discusses this matter fully in the case of local battery desk sets, calling attention to the great confusion resulting from poorly designated and undesignated desk stand bases and from adherence to numeral

designations in stands and boxes for which numbered cord tips are not available.

Attention was also called to the fact that of six possible hitches for the simplest 3-conductor cord, only one is inoperative and only one is right. This means only one chance in six that a random hitch will be inoperative, and only one chance in five that the hitch will be correct after change from the one inoperative connection.

In the case of 3-conductor, common battery stands, none of the six possible hitches will be found inoperative but two will be found so poor in quality they are not likely to be left in service. Of the remaining four hitches only one affords the correct booster circuit. Another is the so-called anti-side tone circuit leaving two "wild" hitches of low efficiency which are likely to be left in service. So the chances are four to one that the correct booster circuit will not be attained in an undesignated stand from which the circuit "stuffer" has become lost.

It is, therefore, necessary to see that both stand and box terminals are correctly designated and that proper cords for such designations are provided and correctly used. Otherwise we cannot insure proper transmission for desk set patrons who produce most of our long distance revenue and are certainly entitled to good station equipment properly maintained.

Cord Circuits: Magneto.

In magneto equipment the post-war standard of all manufacturers has called for a high efficiency, air-gap type repeating coil in each cord circuit, with supervisory equipment bridged around the condenser at the center of the coil and not across the cord circuit.

As this equipment affords double supervision, with approximately one-half unit of transmission loss, it should be adhered to as standard for new equipment and shop rehabilitations. Existing cord circuits should have all miniature and "freak" repeating coils changed to modern high efficiency types. This can be done at small expense without changing cable forms and it is usually possible to change clear-out drops from the "outside hitch," across the talking circuit, to the condenser and secure full efficiency.

Double ring-off cord circuits, without repeating coils, are satisfactory only when circuits subject to unbalance are properly line coiled and when condensers are not smaller than one microfarad and clear-out drops not lower than 450 ohms. Such a cord circuit will show a transmission loss slightly above one unit, whereas cord circuits used for local-to-toll connections should preferably show less than one unit of loss so it is desirable to get better cord circuits into toll positions when possible. These can be either single supervision without repeating coils or condensers, or the modern repeating coil type first referred to.

The use of so-called "zero loss" high impedance circuits should not be attempted in rehabilitation work. Most manufacturers equip the first two cord circuits in each position with repeating coil keys to secure a "zero loss" circuit when the key is thrown; but since the normal repeating coil condition is always balanced, we have yet to find an operator using the zero loss keys and the added complication and expense avails nothing.

If these zero loss cord circuits are to be retained, the key wiring should be reversed to make the zero loss condition normal, as the operator will then give the patron the benefit of the zero loss circuit and will trip the key to cut the repeating coil in, only when noise conditions are encountered. But the difference between zero loss and standard cord circuits is so slight that we are "straining at gnats" in this respect while "swallowing camels" in bad line conditions which should receive first attention.

Cord Circuits: Common Battery.

Toll positions of common battery switchboards have the same cord circuit requirements as magneto switchboards with the added requirement of a proper and adequate battery supply to the local subscriber. Fortunately there is less tendency to insist on 48-volt battery at toll positions of small plants with 22-gauge cable and the consequent reduction in transmitter trouble is very gratifying.

When 48-volt battery must be resorted to for long loops, care should be taken to ballast the cord circuits to avoid burning up transmitters on short loops; and here again our plea for a more rugged common battery transmitter, that will handle heavy battery feeds on short loops, is earnestly repeated. A repeating coil is absolutely necessary in toll-to-local connections and the battery feed should always be through the repeating coil to secure good quality and to remove the battery feed relays from across the talking circuit.

As to local transmission, few cord circuits of the 3-conductor type will be found unsatisfactory if properly maintained. Where 3-wire line circuits are used with 2-wire cord circuits the latter should be changed to the 3-wire type for best transmission results. Such change will be found neither difficult nor expensive, but any rehabilitations that are undertaken on 3-wire cord circuits should be for traffic reasons and without expectation of marked improvement in local transmission.

Line Repeater Coils.

Independent companies that had good success with physical toll circuits in the early days have encountered increasing difficulty in their efforts to convert these into standard "groups" with derived phantom circuits suitable for real long distance work. Such trouble has been due in part to improperly designed coils. For successful work phantom coils should be accurately paired. They must be balanced electrically rather than magnetically, on the line side, by means of parallel windings.

On the switchboard side, single wire tandem windings should be used. The parallel wound line side and the tandem wound switchboard side must be isolated from each other and symmetrically arranged with respect to the magnetic system. When it is considered that not less than 12 types of winding arrangements have been offered as phantom coils, the lack of complete success with such circuits is readily understood.

Not only must the coils be right but ingenuity must be curbed or impossible traffic set-ups will be devised. In general, the phantom circuit should not have any intermediate stations, and each side circuit should be cut at not more than one intermediate point and the opposite side circuit compensated with balancing resistances and not with an idle pair of phantom coils. Bridged stations on side circuits of phantom groups should be discouraged. Thus the chief secret of successful phantom group work is to use proper coils, stick to standard circuit arrangement and attempt no stunts.

Conductivity.

All magneto plants should have direct current conductivity tests made annually, using not more than 3 volts of testing battery. A direct reading voltmeter is satisfactory for this work as it permits line readings to be called as rapidly as they can be recorded. A detailed description of the recommended tests will be found in three consecutive numbers of TELEPHONY, March 20 to April 3, 1926. Stock forms can be used for a continuous record or this information may be listed on the line card which shows the ringer ohms to be subtracted from each total reading to determine the line resistance.

Rural lines are rated by assuming the ringers to be bunched and figuring how far such "bunch" tests from the exchange, which distance should coincide with that to the center of the group served. The excess miles show so much excess resistance over what a new line would test and this has been found one of the most effective methods of getting bad order "switched" lines to act. When a test shows such a group is not five miles from town but 40 miles, in new wire equivalent, something is usually done and they at least cease to blame the telephone company for all of their poor service.

In common battery plants such routine tests cannot be made without disturbing the patron, but one very important addition to each common battery wire chief's testing equipment is an inexpensive milliammeter, cut into the positive or return side of the testing trunk battery supply, to indicate the current which passes through

the patron's transmitter whenever the line is up for test. This also enables the troubleman to determine whether a low current flow is due to a high resistance transmitter or line. By shorting the transmitter out, the change in current flow indicates at once if the transmitter needs to be changed.

To avoid calling patrons for this routine current flow test some exchanges, without party lines, connect the meter in the tip side of a regular cord circuit and have an operator record current flows as she passes the cord to an adjacent operator to answer regular calls. The test cord is then pulled and the connection completed with a regular pair.

With a numerical sheet, a few hours are sufficient to fill in current flows for all lines except a few which can then be called for test. High resistance stations should then be visited for test with the transmitter shorted out and the transmitter changed when it is found to constitute the high resistance. So in both local and common battery plants it is possible to locate all lines showing low conductivity by the tests described. Getting such conductivity up to minimum requirements is usually a matter of maintenance. When any considerable portion of an exchange plant is open wire, low conductivity usually calls for a vigorous soldering campaign to close up all unsoldered copper to iron connections, after which high resistance span joints which are causing serious trouble must also be run down and corrected as hereafter described.

As to where minimum conductivity requirements should be set, we have always been liberal in allowing magneto plants to let exchange loops run up to the common battery limit of 750 ohms before requiring the offending span joints to be located and corrected. This applies to magneto lines that show fairly constant when tested on dry windy days, as any line tending to develop a cut-out should be corrected at once.

Rural lines, not subject to high tension disturbance, may be allowed to develop 150 to 200 per cent of normal resistance before span joints are corrected; but when a line, known to have all copper-to-iron connections soldered, develops more span joint resistance than line resistance, it is time for a joint bridging campaign, or the use of old pitted and rusted-out wire to thread in new wire on the same pin positions, which practice often means a great saving in labor.

Toll lines must of course have conductivity fully kept up to maintain the requirements of balance and freedom from noise and crosstalk. The same means of restoring open-wire conductivity should be used on toll, rural and city lines, the requirements for rural and city lines being less exacting, as before stated. Low conductivity and high span joints in copper line wire are sure to be found where emergency storm repair work has required the use of open splices in place of sleeves and where inexperienced help has failed to sand copper wire before sleeving and to twist sleeves properly. Copper toll lines in such condition are sure to crosstalk between side and phantom circuits and are likely to be noisy if subject to interference.

Open copper wire joints will go bad even more quickly than those in iron wire and when two oxidized and unsanded copper wires are spliced with a new sleeve we have a double-dry-plate rectifier which resists passage of voice current in either direction. The same condition holds when a piece of new copper is open sliced or sleeved between two sections of oxidized copper.

Where necessary to restore the circuits promptly it is permissible to go over—or rather under—the line with a cane pole splice tester and volt-ohmmeter using not over two dry cells as a higher voltage may break down the oxide film and cause bad splices to test good. The same test blades as are regularly used for rusty iron splices have been found not to weaken copper wire as only the weight of the cane pole is necessary to establish reliable contacts.

The usual safety precautions for testing and working lines from the ground should be observed. After the line has been so patrolled and all bad splices corrected, it will usually be found that 95 per cent of the excess resistance was in 5 per cent of the splices. A line so patrolled can usually be depended on to hold its conductivity until a more complete overhauling is justified to remove all open wire splices, correct all doubtful storm sleeves and make any necessary revisions in the transposition scheme.

The procedure in the case of old iron toll and rural lines is approximately the same, except that in the case of rusted iron wire "neck bridging" and soldering of open wire splices which are mechanically good is preferable to sleeving. Some companies do not permit making sleeve splices in rusty iron wire but, where time and pains are taken to sand the iron wire thoroughly with abrasive strip, permanent sleeve splices may be made in wire entirely devoid of galvanizing.

Open splices made in weathered iron wire are likely to go bad at any time and sleeve splices with well-cleaned wire should always be used, except in badly rusted wire, where "neck bridged" and soldered open splices are preferable. While the 3-wire open splice is far superior to the 2-wire mechanically, it cannot be depended on electrically and, since a 2½ cent sleeve will insure life-time conductivity to a $5 coil of wire, there is no occasion for planting the seed for another crop of transmission trouble by using open splices in new iron wire.

Insulation.

While insulation is of the highest importance on long toll circuits and is equally so on short toll circuits with power line exposure, we believe poor conductivity causes more transmission trouble on exchange and rural lines than does poor insulation. Everyone has a chance to see and criticize bad tree conditions, whereas bad conductivity is an invisible condition and as such deserves greater emphasis.

Routine insulation or leakage tests should be made at regular intervals and a proper standard maintained. For short haul Independent toll lines 10 megohms or 100 "unit leaks" per mile should be the maximum leakage allowed. A full explanation of the unit leak versus the megohm system of rating toll line insulation will be found in TELEPHONY for December 15, 1928. This article covers the subject quite exhaustively, showing how existing meter equipment may be used with multipliers and 150 volts for insulation or leakage testing, and how it is further necessary to make such tests with both battery polarities, not only to neutralize foreign current, but on account of the rectifying action of oxidized wire to foliage contacts.

Inductive Disturbances.

Inductive disturbances have been incidentally referred to in connection with line conductivity and insulation but, in addition to these, inductive balance against crosstalk and power noises must be maintained by proper transpositions.

How to transpose lines for given situations can not be told in words, but can be shown only by diagram and it is further necessary to take field notes and measurements before a proper transposition diagram for any toll line can be drawn up. The making of such layouts is almost as much of a trade as armature winding. While the finished diagram for a section of exposed line transposition may appear unnecessarily "chopped up," such systems are usually necessary for best results. So in the building of a new toll line we should never fail to secure a proper transposition layout and to have the completed job checked for strict compliance with the diagram.

In the case of existing lines it is first advisable to secure an exact diagram of

Savings Develop Character.

Savings represent much more than mere money value. They are the proof that the saver is worth something in himself.

Any fool can waste; any fool can meddle; but it takes something more of a man to save; and the more he saves the more of a man he makes of himself.

Waste and extravagance unsettle a man's mind for every crisis; thrift, which means some form of self restraint, steadies it.—Rudyard Kipling.

what transpositions and what types are already in place. A practical man, who understands all types of transpositions, will probably be able to effect great improvements by shifting and rearranging a portion of the present transpositions without resorting to the very expensive process of providing new transpositions throughout the entire open wire plant.

Direct current balance for each conductor, measured by the metallic method and not to ground, should first be secured and insulation brought up to standard, after which existing circuits should be given the fewest number of additional transpositions which will meet service requirements.

In general, those of us who are charged with grading up transmission and service must realize that the most ideal methods, which would be used in new work, are seldom available because we must correct deficiencies and exhaust the useful life of equipment and construction in place.

Could ideal methods be followed and out of style equipment and construction completely replaced, our work would cease to be interesting and our services of far less value.

But with the necessity to observe financial limitations and commercial possibilities and to get results with reasonable and proper expenditures, both for maintenance and for new plant and equipment, comes an opportunity to show managerial ability and to save our salary as many times over as possible by economies which do not impair the value of our particular service to the public.

Personal Notes from the Field

T. L. Youmans, of Osawatomie, Kans., a pioneer in Kansas Independent telephony, in April of this year retired from activity in the association of that state, after serving as its president for 18 years. Evidence of the esteem in which he is held among his associates in Kansas is shown by L. M. Kraege, secretary of the Kansas Telephone Association, in the following:

"One of the most staunch advocates and supporters of Independent telephony that Kansas ever had is T. L. Youmans, retiring president of the Kansas Independent Telephone Association. He was a 'square shooter,' and expected everyone else to be just as fair; a veritable 'watch dog' over everything that affected the Independent interests and ever alert to prevent any encroachment upon its privileges.

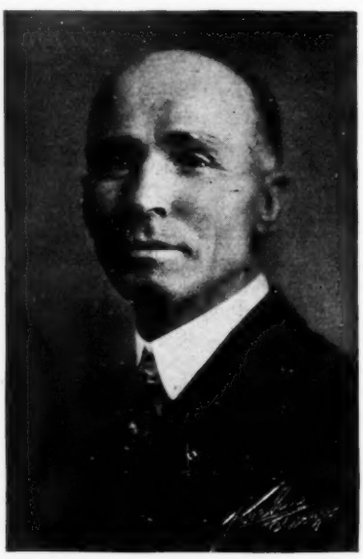
T. L. Youmans, more generally known as 'Tom,' entered the telephone field in 1899 at Osawatomie, where he gained telephone experience as he grew up with the plant. In the spring of 1911, he was elected president of the Independent Telephone Association and served as its president until the annual convention held in April, 1929.

Throughout all these years, 'Tom' was very active in directing the affairs of the association, giving of his time and spending his money freely whenever and wherever he thought it would in any way promote the interests of the association, even though it might at the time materially affect his own personal interests.

He is a man of very strong convictions, yet does not let his positivity get the better of his good sense. He is staunch and loyal as a friend, but keenly antagonistic to those who oppose him or those he dislikes; a wonderful friend to have, very direct in his address.

It has been our pleasure and privilege to serve as secretary of the association during the last ten years of Mr. Youman's presidency. We found him an able counselor; familiar with every phase of telephone business. A keen mind able to grasp every problem quickly and equally keen to assist in finding a quick solution.

While his operating experience was confined to the two plants at Osawatomie and Beagle, he was broadminded enough to comprehend the needs of the Independent industry throughout the state, and was a great help in organizing the association in



T. L. Youmans, Retiring President of the Kansas Independent Telephone Association, Has Done Much for the Independent Telephone Industry in That State.

building up to its present state of efficiency and usefulness.

His advice and counsel supported by his practical experience were invaluable in helping build up the constructive plans in the development of the Independent association. It helped us to avoid mistakes and was a check upon our overzeal in promoting new measures. We always found his advice sound and his suggestions helpful and timely.

We found him ready and willing to cooperate in the association matters at any time and under every circumstance. We therefore felt perfectly free to consult him at all times. We made much use of this privilege and always found him ready and willing to set aside his own affairs and attend to association matters first.

About a year ago Tom sold his plants at Osawatomie and Beagle to the Kansas Telephone Co., and since then has been enjoying a well-earned vacation and rest. His heart is still in the telephone business and he may get back into active work in the telephone field if opportunity offers. In fact, we understand he is now on the lookout for such an opportunity.

The Independent telephone industry of Kansas owes much to T. L. Youmans and his untiring efforts for its present development and prosperous condition. The Independent operators will never know how much Tom has done for them."

William E. Moler, Jr., cashier and assistant treasurer of the Athens County Telephone Co., Athens, Ohio, was married on Monday, June 3. Mr. and Mrs. Moler will make their home at Athens.

Obituary.

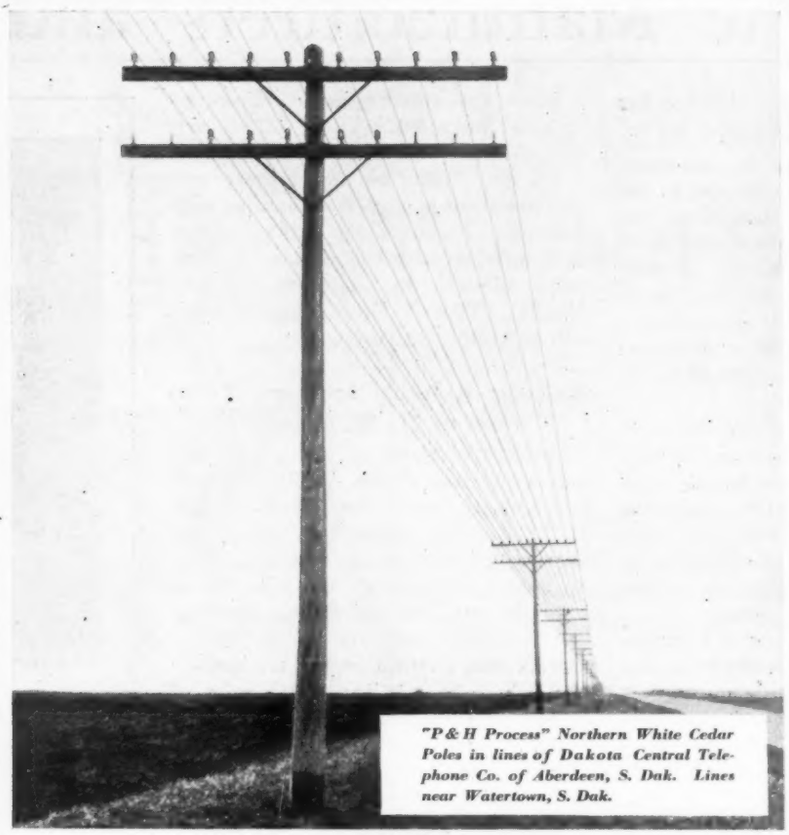
John Orlando Punteney, until recently the owner and manager of the Vermillion Telephone Co. at Vermillion, Kans., died December 19, 1928, at the age of 68 years at Long Beach, Calif.

Mr. Punteney was born February 28, 1860, at Frankfort, Kans. He married Miss Nannie Cormack of Albany, Mo. in September, 1891. They lived at Albany for two years and then moved to Vermillion, Kans., where they operated the telephone plant until the spring of 1928, when he sold his telephone property to the Kansas Telephone Co. After selling out, Mr. Punteney went to Long Beach, Calif., to try and regain his health, but passed away December 19, 1928.

During the time Mr. Punteney was in the telephone business he served as mayor of Vermillion for two years, and was always active in all the civic affairs in Vermillion.

Mr. Punteney leaves to mourn him his wife, six brothers, and four sisters, a large number of nephews and nieces, and a large circle of friends.

Mr. Punteney was one of the pioneers of Independent telephony in Kansas.



"P & H Process" Northern White Cedar Poles in lines of Dakota Central Telephone Co. of Aberdeen, S. Dak. Lines near Watertown, S. Dak.

P&H

"P&H Process" Poles *meet Modern Demands*

Engineering practice today determines the correct size pole to carry a required load and provide the desired factor of safety . . . the proper correlation of load and pole size.

In "P & H Process" Poles, you will find a size under each length which is adequate for the calculated load. It is simply a matter of selecting the correct top size or class. With the calculated load in pounds, we can give you the correct size of pole to use.

Prompt shipment on all Cedar Pole needs—
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When writing to Page and Hill Co., please mention TELEPHONY.

With the Manufacturers and Jobbers

Announces New Coin-Collector for Strowger System.

The coin-collector made by Automatic Electric Inc., of Chicago, for use in the Strowger dial system, has been redesigned, and now embodies a number of improvements on the collector formerly furnished. A new circuit has been developed, making it less critical in adjustment —in fact, the collector will now operate over a line of as high as 2,500 ohms resistance.

The circuit is so arranged that the transmitter and receiver of the telephone are shunted out while a call is being dialed, and a coin must be dropped to remove the shunt and permit conversation. The coin must not be dropped until the called party answers, for it would then be lost in case of "busy" or "no answer" calls.

On the other hand, any delay after the called party has answered might cause him to become impatient and hang up. A suspended-coin slot has, therefore, been substituted for the old type. This slot holds the coin in position so that it may be dropped into the chute by the mere flip of a finger, thus encouraging subscribers not to drop the coin until the called party answers.

The new circuit, and the suspended-coin slot, may both be applied on existing coin-collectors. Details of the circuit, and further information, are available in Automatic Electric Inc. engineering bulletin No. 311, "Type 29 Coin-Collector," which will be gladly sent on request.

Kellogg Assigns Southern Territory to H. M. Stewart.

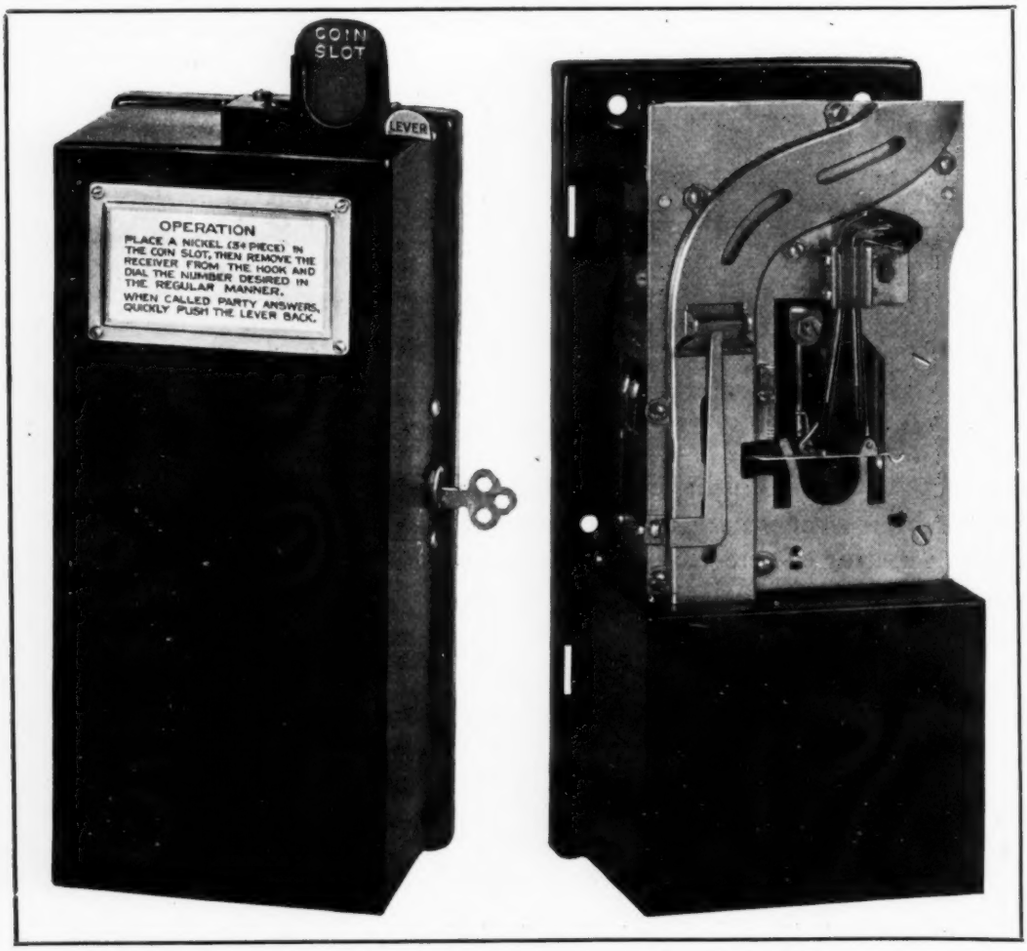
Despite the numerous friends he made during his stay at the Chicago office of the Kellogg Switchboard & Supply Co., H. M. Stewart became homesick for the Southland, where he was born and where he lived practically all his life. He is contented now, for the Kellogg company has assigned the Georgia, Alabama, Florida and South Carolina territory to him, where he will handle the sales of Kellogg telephone equipment.

Mr. Stewart has devoted all of his business career to the telephone industry. While still a high-school student, he obtained a position with the Southern Bell Telephone & Telegraph Co. as a night operator in his home town, Centerville, Ala. After two years he was promoted to the position of "grunt" or helper to a construction crew, and later was assigned to the Anniston, Ala., exchange as station installer.

H. M. Stewart, a Native of Alabama, Will Handle the Sales of Kellogg Telephone Equipment in Four Southern States of the Company's Territory.

This was just about the time of the World War, when he readily exchanged his cable tester for a khaki uniform. He was assigned to a special detachment of the Signal Corps and was stationed at Camp Pike, Ark., on special duty.

Returning from the army, Mr. Stewart naturally turned back to the telephone field, where he had already acquired a reputation as a "good man to have on the job." After working just a short time as station repairman at Tuscaloosa, Ala., exchange, he was transferred to the commercial department as cashier. This was the turning point of his career, for his days of looking for "telephone troubles" were now over.


COIN SLOT
LEVER
OPERATION
PLACE A NICKEL (5¢ PIECE) IN THE COIN SLOT, THEN REMOVE THE RECEIVER FROM THE HOOK AND DIAL THE NUMBER DESIRED IN THE REGULAR MANNER.
WHEN CALLED PARTY ANSWERS, QUICKLY PUSH THE LEVER BACK.

Views of New Coin Collector for Strowger Automatic System.

"...and there are Telephone Outlets Throughout the House"

THINGS which make a house more livable—which add to comfort and smartness—appeal strongly to home buyers.

Adequate closet space. Two or more bathrooms. Modern labor-saving appliances. *Telephone outlets throughout the house.*

People everywhere are welcoming this modern idea of convenience . . . telephones wherever they are needed, for ease in placing and answering calls. Telephone outlets are provided in nearly every room, by placing conduits and other facilities inside the walls during construction. Telephone service can then be better fitted to the exact requirements of the home buyer.

Builders are finding telephone convenience a strong aid in selling homes. It saves steps. Adds to smartness and appearance. Insures the prompt receipt of important calls. Protects when emergencies arise.

To aid those interested in specific building projects, the Bell System has issued two booklets. They outline desirable facilities for telephone wires and apparatus, and illustrate appropriate arrangements of telephones in different types of residences and buildings.

Your local Bell company will be glad to furnish and install suitable telephone equipment in your sample houses, to show how the facilities you have *built in* can be utilized to give the greatest convenience and satisfaction.

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — BELL SYSTEM

This advertisement, emphasizing the appeal of complete telephone arrangements to home buyers, is appearing this month in magazines edited for builders.

During the next three years he served in the respective capacities of contract clerk, adjustment clerk and collection supervisor at Montgomery, Ala., and commercial supervisor at Gadsden, Ala., where he left the Bell company to work for the Kellogg Switchboard & Supply Co.

For two years, Mr. Stewart traveled the states of Kentucky and Tennessee as sales representative for the Kellogg company. In 1925 the company decided it needed him at home, so he was made assistant to Mr. Mounteer of the switchboard sales department, working there until he was assigned to his present work a short time ago.

This rounds out 13 or more years of service in the telephone world, during which time Mr. Stewart has earned the reputation of being a telephone man of the highest calibre.

Houston Wood Preserving Plant Bought by Texas Company.

Announcement has been made of the purchase of the plant of the Houston Wood Preserving Co. of Houston, Texas, by the Texas Creosoting Co., of Orange, Texas, manufacturer of "Black Beauty" creosoted products. This combination of two of the best known plants in the industry is of wide interest.

The Houston Wood Preserving Co. has a modern creosoting plant, covering some 40 acres and for a number of years has been serving many of the largest users of creosoted products.

Considering the length of time it has been in the field, the Texas Creosoting Co. has had a remarkable growth. Starting from the ground up five years ago, this company constructed its first unit at Orange, Texas. Today, it is one of the foremost producers of creosoted materials in the United States, and its products are distributed throughout this country and in many countries of foreign nations as well.

The red-top creosoted pole, which is a copyrighted idea of the Texas Creosoting Co., has attracted much attention among pole purchasers.

According to R. S. Manley, president of Texas Creosoting Co., his organization will operate the newly acquired unit at Houston to the end of bettering the service now being offered users of creosoted materials in all fields.

Bird's Eye View of Plant of the Houston Wood Preserving Co. at Houston, Texas.

American Industry Has Adopted 102 Simplification Programs.

A total of 102 simplified practice recommendations have been effected to date by American industries, in the co-operative effort to eliminate waste through a reduction in the manufacture of superflous varieties of staple articles, according to a report covering the activities of the commercial standards group of the Bureau of Standards, United States Department of Commerce, for the first three months of 1929, just made public by Ray M. Hudson, assistant director of the bureau.

This report reviews the progress made during the first quarter of this year. At the end of the first quarter of 1928, industry had developed a total of 85 simplification programs. During the 12 months intervening, there was a gain of 14 simplified practice recommendations.

Prior to March 30, 1928, a total of 9,456 trade associations and firms had signified their support to the various programs. By the first quarter of 1929, this support had increased to 21,543, or a gain of 52 per cent. Seven simplified practice recommendations are in process of acceptance.

Stromberg-Carlson Display at the Up-State Telephone Association of New York Convention at Rochester, Featuring Construction Materials, a No. 105 Magneto Switchboard, and Hand Set Telephones. The Hand Set Telephones Were Displayed in a Variety of Colors, Antique Ivory, French Gray, Statuary Bronze and Silver.

Radio Manufacturers Plan Billion Dollar Pool of Patents.

A billion dollar patent pool to eliminate patent litigation in the radio industry was authorized last week by the Radio Manufacturers' Association at its annual convention in session at the Stevens Hotel, Chicago.

Members of the proposed pool would find it unnecessary to go to court over patents with their competitors, because all those entering it would interchange patents and relinquish restrictive rights.

Proposed Communications Developments in the Bahamas.

The Bahamas Cable & Telephone Company, Ltd., has recently been incorporated in the Bahamas. This company has filed a petition for a franchise for the operation of telegraphic and telephone service, in addition to the proposed establishment of cable communication between Nassau and the mainland of the United States, presumably Florida. The petition of this company is now being considered by a select committee of the Bahamas assembly.

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Principles and Practice of Telephony

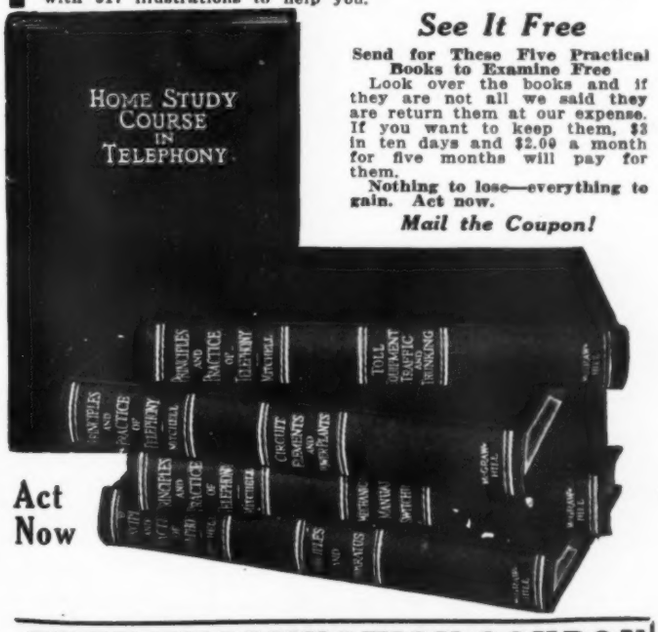
These five books place thousands of practical facts at your command for instant use.

Beginning with a comprehensive survey of the basic principles involved, the author discusses such subjects as telephone apparatus, circuit elements and analysis, typical cord combinations, telephone power plant equipment, coil winding, the toll switchboard and toll equipment in the multiple office.

You learn about toll trunking, the nature and laws of telephone traffic, machine and automatic ringing, call distribution, trunk mechanical switching, mechanical-manual switching, etc.

All these subjects with scores of others, equally important, are treated in detail. Illustrations are used freely throughout the books, and a comprehensive index enables the reader to put his finger immediately on any desired fact.

To earn an expert's pay, you know that an expert's knowledge is necessary. With these books you get the combined experience of many telephone experts—down in black and white, with 317 illustrations to help you.



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What the Commissions Are Doing

Up-to-the-Minute News Regarding the Activities of State and Interstate Commissions, Courts and City Councils in Matters Concerning Telephone Companies—Summary of Commission Orders and Schedule of Telephone Hearings

Senate Committee Authorized to Investigate Communications.

An investigation of relationships between various communications services used in the interstate and foreign commerce, including radio, telephone, telegraph, and all kinds of wireless and cable services so used and transmission of power by wire or wireless, of the connections between the corporations engaged in the operation of communications services, and of the connections between such corporations and all other interests, was ordered by the U. S. Senate on June 8.

The inquiry is to be made by the Senate committee on interstate commerce or a subcommittee of that body.

The action of the Senate took the form of the adoption of the resolution (S. Res. 80) introduced by Senator Couzens, Michigan, chairman of the interstate commerce committee. The resolution was reported from the committee on audit and control and adopted by unanimous consent without debate. Previous it had been reported favorably from the committee on interstate commerce.

The scope of the investigation is given in the resolution which was published in TELEPHONY of June 8.

Alabama Commission Interested in Service of South Central.

With the prospect in view that telephone service difficulties experienced in 12 Alabama towns recently will be remedied through the sale and subsequent rehabilitation of the telephone properties of the South Central Telephone Co. in these communities, the Alabama Public Service Commission held a conference with the mayors and councils of all these towns in Birmingham on June 7. At this conference the whole situation, including prospective transfer of telephone properties concerned, with a resulting betterment of service, was thoroughly canvassed. Towns affected are Aliceville, Carrollton, Fayette, Gordo, Guin, Hackleburg, Haleyville, Hamilton, Reform, Sulligent, Vernon and Winfield.

In notices of the conference mailed to mayors and councilmen the commission called attention to the fact that on May 25, a contract was signed by the First Guardian Co. of Chicago, Ill., an investment banking concern, with representatives of bondholders who hold a majority of the bonds of the Mid-Continent Utilities Co. The latter company is the holding company that owns the South Central Telephone Co.

Under this contract, it is stated, all telephone properties of the South Central company are to be taken over by the Southwest States Utilities Co. or an associated company, and the purchaser is to pay off all current indebtedness of the South Central Telephone Co., including debts due the Southern Bell Telephone & Telegraph Co., and is to restore long distance connection and enter at once upon a rehabilitation of the properties and service, both local and long distance, of all of the South Central Telephone Co. exchanges.

The sales transaction referred to is expected to be closed up about the middle of this month. The Alabama commission, it is said, has good cause to believe that provision will be made promptly thereafter for reestablishment of long distance telephone service to all the towns involved.

The commission is aware, it is stated, of "the hardships which have been suffered in all the towns named for lack of good telephone service since the South Central began to have its financial difficulties," and has been doing all in its power to help the situation as a whole.

It has been ascertained, it is added, that steps have been taken by some of the towns toward vacating the franchise of the South Central Telephone Co. or to supersede the exchange of that company by some other company.

It is the commission's unanimous view, it is stated further, that the welfare of all the towns named in the matter of telephone service is tied together in this situation and also that the towns served by the South Central company should take no further steps toward vacating the franchise of the South Central company until a reasonable period of time has elapsed to permit the details of the pending sale and transfer to be carried out.

Mountain States Authorized to Increase Rates in Phoenix, Ariz.

Permission to raise telephone rates in Phoenix, Ariz., was granted to the Mountain States Telephone & Telegraph Co. by the Arizona Corporation Commission on May 27, to be effective June 1. Increases in business rates are $18 per year and in residence rates $6 per year. At the same time the base rate limits under which telephone service is sold were increased to include a much larger area in which an additional mileage charge will not be collected.

The decision follows a series of hearings before the commission which have extended over nearly two years.

In the report of its findings the commission states that no evidence was introduced at its various hearings other than that offered by the telephone company, and that the deliberations of the commission were seriously handicapped by this fact, because the state itself was forced to seek for argument in rebuttal of the telephone company's statements.

The commission order recites evidence introduced by the company showing that during the past several years it has been operating on a deficiency basis, its net earnings above operating expenses falling short of providing an adequate income return on the money invested in its physical properties. This deficiency in revenue was $42,194.34 in 1924, and increased to $100,886.50 in 1927.

The findings of the commission also go in detail into the physical valuation of the property and the value of the good will and franchises which have been either purchased or developed by the company, and sets a final figure of $1,965,595.34 as the total valuation of the Mountain States property in the city.

The commission in its opinion said:

"From the evidence in the case it is apparent that the revenues derived from the service rendered in the Phoenix exchange are insufficient to produce a fair return upon the present value of the property used and useful in giving service in Phoenix, and that this situation has been brought about by the increased expenditures for plant and equipment in the Phoenix exchange area, made necessary by the increase of the population served by that exchange and the bettering of service.

It is also apparent from the evidence that the rates asked for will only give the company a return of 5.37 per cent on the present fair value of its property, which is much less than a return of 8 per cent, that the commission finds to be a reasonable rate of return, and the commission is, therefore, of the opinion that the rates asked for by the company are reasonable and should be approved, subject, however, to a modification in this regard.

The base rate area is extended to include the territory enclosed within the boundaries of the urban area covered by the commercial survey as shown by map dated February 1, 1929, on file with this commission, which extension will give the benefit of individual line and two-party line service without excess mileage charges throughout the increased base rate area.

Schedule 'B' of the proposed rates is

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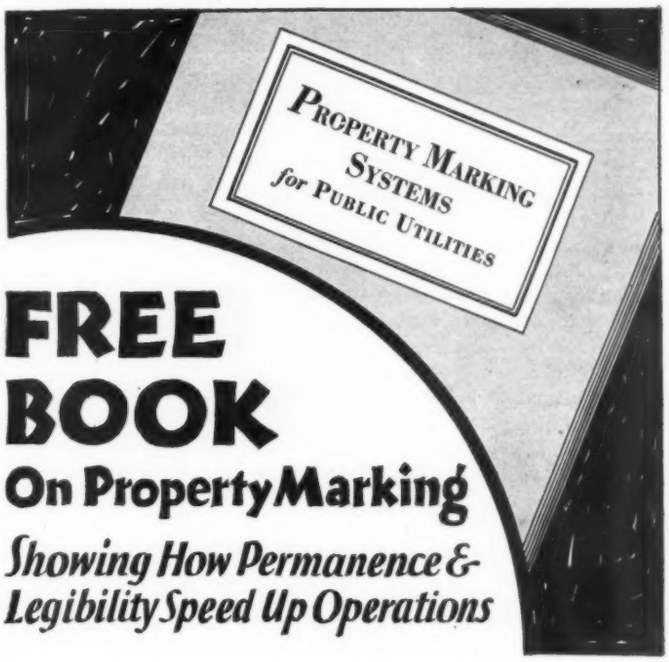

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also modified to include all classes of service in the exchange area outside of the base rate area, as herein defined.

The commission finds that the fair present value of the property of the Mountain States Telephone & Telegraph Co., used and useful in giving exchange service within the Phoenix exchange area as of January 1, 1927, is $1,965,593.34; that the rates now charged do and will afford the company a return of less than 8 per cent, and that the rates requested by the company are just and reasonable.

It is therefore ordered: That said company be and is hereby permitted, authorized and directed to make and file with this commission a schedule of exchange rates and charges applying to its business in the Phoenix exchange in accordance with this order, to be made effective on June 1, 1929."

San Francisco Files Rate Schedule in Pacific Bell Case.

Basing his figures on his previous contention that the Pacific Telephone & Telegraph Co. should not receive a rate return of more than 6½ per cent on its capital investment, Dion R. Holm, assistant city attorney for San Francisco on May 31 filed with the California Railroad Commission a new schedule for spread of rates.

This schedule provided a monthly rate of $3.75 for one party, flat rate residence telephones, which is 75 cents less than that asked by the company and 50 cents less than that recommended by Lester S. Ready, consulting engineer for the commission.

Mr. Holm presented his exhibit by placing E. A. Bender, rate engineer for the city, on the stand at the beginning of the May 31 proceedings in the rate case hearing, now entered on its third year since the company filed application for permission to increase rates a total of $7,000,000 annually in San Francisco and the east bay.

Previous testimony and exhibits introduced by San Francisco have placed the capital investment of the company at $29,309,162, while Mr. Ready has placed it at $40,756,865, his estimate for the combined areas being $63,366,575. Mr. Holm and his engineers justified their figures by the contention that certain items accepted by Mr. Ready had no place in the structure and that others represented duplications.

Mr. Holm's figures at 6½ per cent would give the company an annual subscriber station revenue of $9,852,487, and at 6 per cent, $9,668,027. Mr. Ready's rate spread, at 7 per cent, would give a station revenue of $11,161,293.

For the greater part of the session on May 31 Mr. Ready was on the stand under cross-examination by W. W. Cooper, rate expert for Oakland, and Charles Clifford, representing the hotel owners and other groups of protestants. Both said they had additional testimony to be presented, and would be prepared by June 13, the date set for a resumption of proceedings.

The principal exception taken to Mr. Ready's rate spread recommendations were that in many instances they would mean an increase in the east bay much greater than in San Francisco. Some examples cited showed that the increase in the east bay would be as much as 80 per cent.

Mr. Ready defended his estimates by showing that in the instances of issue the subscriber had enjoyed an immense advantage over others having the same class of service, and that by his spread method these inequalities would be equalized. His stand that the east bay and San Francisco should be placed on a parity also was opposed.

The rates he has recommended would give the company an annual increase in revenue of $1,800,000 and of this sum $500,000 would come from the east bay.

Oklahoma-Arkansas Loses Federal Injunction Suit Against Bell.

On June 1, Federal Judge J. E. Martineau at Little Rock, Ark., denied the plea of the Oklahoma-Arkansas Telephone Co. to compel the Southwestern Bell Telephone Co. to re-employ it as its agent at Poteau, Okla., and to reconnect its lines at Fort Smith with the toll lines of the Oklahoma-Arkansas company.

The controversy between these companies has been before the Oklahoma commission and several courts for nearly two years, and the various steps have been fully reported in TELEPHONY. Briefly, the history is that the two companies, before December 22, 1927, had an agreement on routing of calls and a composite method of settlement.

The Oklahoma company, because dissatisfied with the settlement, held back 25 per cent of scheduled settlements amounting to between $4,000 and $5,000 up to December, 1927. The Southwestern Bell company, to adjust the difficulty, gave a 30-day notice of discontinuance of the contract. At the end of that time, it disconnected the toll circuits of the Oklahoma company from its Fort Smith switchboard and established an office in Poteau to handle the toll business.

The Oklahoma Corporation Commission later laid down a ruling providing for a connection at Poteau on long distance calls, also fixing the compensation for the Oklahoma company. The latter, however, did not carry out the terms of the order.

The Oklahoma company has appealed from the commission's order to the Supreme Court of Oklahoma and that case is still pending.

The Oklahoma company by the suit in the federal court at Little Rock, Ark., sought by injunction a re-connection of its long distance lines with the Southwestern Bell company's exchange at Ft. Smith, a restoration of the physical connections between the two companies as they existed under the terms of the contract of 1923.

Attorneys on both sides filed very carefully prepared briefs covering the many points of law raised in the argument and presentation of this case. Only such of these, however, were discussed by Judge Martineau in his opinion as were relevant to the issues to be decided.

"In the beginning," the court stated, "it is important to determine just how the granting of the relief prayed for would affect, first, the public as telephone users, and next, the rights of the two litigants.

"The record shows that the public are not materially inconvenienced by the failure to maintain a physical connection of the two telephone systems at Ft. Smith. This is certainly true if the order of the Oklahoma Corporation Commission is carried into effect. Under existing conditions all calls are transmitted over the Bell company's line, with equal, if not better, transmission facilities than the Poteau company's line affords. The delay, if any, occasioned by the mode of handling messages at Poteau would be entirely removed by plaintiff's complying with the terms and conditions of the order of the Oklahoma Corporation Commission, which this court regards as just and equitable.

This being true, it is difficult to see how the public is in any way interested in this controversy. This then removes from the case all questions of law with reference to the regulation and control of public utilities in their relation to the public, the controlling factor in almost all of the cases cited by both plaintiff and defendant. When the public interest is removed from the case, entirely different principles of law determine the conclusion that should be reached. Public necessity and convenience require public utilities to do many things which private individuals or companies cannot require.

In my opinion this controversy resolves itself into one between the two telephone companies competing for the long distance business passing through both Poteau and Ft. Smith; at least that part of it which prior to the termination of the contract of 1923, was handled by plaintiff. In such a case the principles of law governing the making of contracts between private individuals are applicable.

One telephone company cannot, where the public interest is not affected, compel a connection with its competitor solely upon the ground that a failure to obtain such a connection will cause it loss. This is the plaintiff's contention.

If that principle of law is sound, any small company owning a local exchange may build long distance lines connecting its exchange with the exchanges of a larger company, like the defendant, owning exchanges in many places and operating long distance lines covering with

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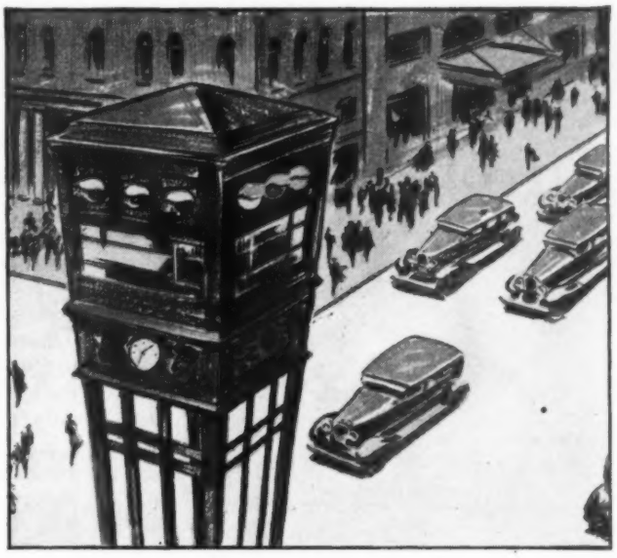

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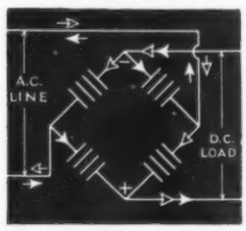

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its other connections, all important places in the country, and compel a connection with these exchanges, although the larger company has ample long distance facilities for handling the business between the connected points. This would certainly depreciate and might destroy the value of the larger company's properties.

The principle of law which would logically bring about such a result is unsound, even when applied to public utilities, unless such a physical connection, when dealing with telephone companies, is clearly demanded by statute or constitutional provisions. Even then where the public interest is not affected, it is doubtful if the connection may be required where private property is taken or used without just compensation being made therefor. The result of granting the relief prayed for would be to establish two competing toll lines between Poteau and Ft. Smith, and in that way take from $200 to $500 per month from the defendant and give it to the plaintiff.

The fact that the failure to grant the relief asked destroys to a large extent the value of the long distance line of the plaintiff, does not entitle it to compel a connection with the defendant. This hazard it should have considered when it constructed the line. When the public interest is not affected, its right to use the defendant company's property is one entirely of contract. Besides the public ought not to be required to maintain two long distance lines between Ft. Smith and Poteau, when one line affords all the telephone facilities needed. If the tolls now charged are too high, ample legislative authority exists for regulating them. The legislature and not the courts makes the laws.

The contention that the defendant has surrendered the independent use of its property by contracting with the plaintiff to use it as a part of a public utility, is sound only when the facts justify the holding that the failure to continue to so use it will inconvenience the public. The reason for the rule, if it exists at all, is that the public would be inconvenienced by the failure to continue the contracted use of the property; and when the reason fails, the rule no longer applies.

Contracts between two telephone companies for the joint use of their telephone facilities are governed by the same rules that govern contracts between private individuals, unless the convenience of the public is interfered with by the failure to continue to use their property for the purpose to which it was devoted. Public convenience, and not the interests of the contracting parties, determines the right to terminate such a contract.

Plaintiff earnestly contends that the defendant, having made contracts for long distance connections with other companies, must extend a like service to it. An examination of the contracts which the Southwestern Bell company has made with two local telephone companies operating exchanges in points near Ft. Smith, with long distance lines into Ft. Smith, having a physical connection with the Bell company's exchange, shows that the terms are not materially different from the contract of 1923 between the plaintiff and defendant.

It is certain that these connections are by contract. The service asked for in this suit is entirely different from the service rendered the other two companies.

This suit is not to prevent the breach of an existing contract, but to compel a connection without a contract, and without an order of a regulatory body requiring a connection. If it were the law that a defendant having granted a connection to other companies must upon the same terms extend a like service to the plaintiff, the fact shows that the defendant originally had a similar contract with the plaintiff, the termination of which was brought about by the failure of the plaintiff to comply with its terms.

The sole purpose of this suit is to require the defendant to permit the use of its telephone facilities by a competitor. The convenience of the public is in no way affected. Under these conditions, it is fundamental that the relief cannot be granted."

Applies for Depreciation Allowance Readjustment.

The Cambridge Telephone Co. has applied to the Nebraska State Railway Commission, through its president, Herman Wildeman, and its secretary, D. L. Rankin, for a readjustment of the depreciation allowance.

In 1920, the commission, after a hearing, ordered the company to set up $2,160 a year. Since that time the depreciable assets of the company have more than doubled, and while it concedes that 2.5 per cent is sufficient for the new exchange property it has acquired in that time, the allowance on the whole is inadequate.

The company submits detailed figures prepared by expert accountants to show that it has been able to set up only about 2.5 per cent in the last nine years, with the result that its fund is inadequate to take care of future replacements. It also asks authority to go back five years and charge more depreciation in order to equalize the situation as it exists at the present time.

Southwestern Bell Sells Holdings in Southeast Missouri.

The Southeast Missouri Telephone Co. on June 1 took over the holdings of the Southwestern Bell Telephone Co., in southeast Missouri. Purchase of the property by the Southeast Missouri company was approved by the Missouri Public Service Commission.

The sale price was announced as $1,336,000 and concerns holdings at the following places: Benton, Bloomfield, Camp-

bell, Cardwell, Caruthersville, Clarkton, Chafee, Charleston, Dexter, East Prairie, Essex, Hayti, Harnersville, Kennett, Lilbourne, Maiden, Morehouse, New Madrid, Oran, Portageville, Popular Bluff, Sikeston and Senath.

Officers of the purchasing company are: General Manager Chas. W. Boutin, Cape Girardeau; president, John Tiapek, St. Marys, and secretary, J. P. Crowley, St. Louis. Headquarters are at Cape Girardeau, Mo., where a contract was let June 5 for a new office building to be occupied by the company.

The order by the commission authorized the Southeast Missouri Telephone Co. to issue stocks and bonds in the amount of $1,350,000 divided as follows: $750,000 first mortgage, 6 per cent 20-year gold bonds, and $586,000, 6 per cent cumulative preferred stock, represented by 5,860 shares of $100 par value.

The purpose of this bond and stock issue is to pay the purchase price of $1,336,000 for the property and the $14,000 difference is to be used as working capital.

Increased Annual Rates Authorized Wisconsin Company.

The Wisconsin Railroad Commission recently authorized the Independence Telephone Co., Independence, to discontinue its present schedule of rates for service and place in effect the following net annual rates:

Business	$18.00
Residence, single party	15.00
Party line	13.00

Old rates of the company were $13 annually for all subscribers. Service is provided to 39 business telephones, 40 single party residence and 276 party line telephones. By applying the new rates an additional revenue of about $775 will be received annually, the commission found.

The rates provide an allowance of 13 per cent for depreciation and return on a value of about $16,150, or about $46 per telephone.

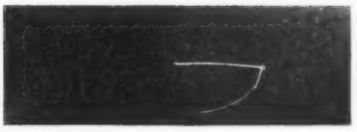
Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

June 18: Hearing at Washington before Examiner Davis in the matter of the application of the Bell Telephone Co. of Pa. for authority to acquire the properties of the Cresco & Greentown Telephone Co. located in Barrett and Price townships, Monroe county, and Green township, Pike county, Pa., for which the Bell company agrees to pay the sum of $40,000.

June 18: Hearing in the matter of the application of the Mountain States Telephone & Telegraph Co. for authority to purchase the properties of the Estancia Telephone Co., Estancia, N. M., for the sum of $20,000.

June 18: Hearing at Washington before Examiner Davis in the matter of the application of the Southern Bell Telephone & Telegraph Co. for authority to acquire the properties of E. M. Warfield, doing business as the Home Telephone Ex-



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Type "J-4"—4' wide, 8',—8'6", or 9' long and 5'6" headroom.

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change, operating an exchange in the town of Benton, Marshall county, Ky. The Bell company agrees to pay the sum of $1,000 for the property.

ARIZONA.

May 27: Mountain States Telephone & Telegraph Co. authorized to increase rates effective June 1. The rates on business telephones are increased $18 per year and on residence telephones $6 per year.

CALIFORNIA.

June 5: A certificate of public convenience and necessity granted to Interstate Telegraph Co. for the extension of exchange telephone service from its central office in Barstow to the towns of Daggett and Vermo and vicinity in San Bernardino county.

ILLINOIS.

June 12: Hearing at Chicago in the matter of application by the Illinois Bell Telephone Co. for the approval of lease of certain premises at southwest corner of Franklin and Washington streets, Chicago, to Hubert M. Noble and Grover A. Peterson, co-partners as Noble & Peterson.

June 12: Hearing at Chicago before Chairman Moynihan in the matter of application by the Middle States Telephone Co. of Illinois for an order authorizing the issue of $75,000 of its 7 per cent cumulative preferred capital stock.

June 13: Hearing at Chicago in the matter of joint petition for the approval of sale by the Harvard Telephone Co. of its telephone property in Harvard and vicinity and approval of purchase by the Illinois Bell Telephone Co.; also for a certificate of convenience and necessity to the Illinois Bell company to operate in the territory of Harvard and vicinity.

INDIANA.

May 21: Indiana Bell Telephone Co. filed application for permission to buy $19,500 worth of gold bonds bearing 6 per cent interest, which are being offered by the Citizens Telephone Co. of Brazil, operating telephone service in Clay county.

June 19: Hearing on application of the Home Telephone Co. of Wabash for authority to increase rates.

KANSAS.

May 24: Application granted of the Farmers Telephone Co. for permission to change its rates for service at Randall.

MONTANA.

June 18: Hearing on the application of the Miles City-Ekalaka Telephone Co. to abandon its line.

NEBRASKA.

June 4: Application filed by Frontier Telephone Co. of Hubbell for authority to increase telephone rates.

June 4: Application filed by Reynolds Telephone Co. of Reynolds for authority to increase its telephone rates.

June 5: Application filed by Cambridge Telephone Co. for an increase in depreciation allowance, experience having shown that existing limitations is inadequate because of increased investment of properties.

June 18: Hearing in the matter of the application for increased rates by the Pioneer Telephone Co. of Hubbell and the Reynolds Telephone Co., Reynolds.

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NEW YORK.

June 7: Oxford Telephone Co., operating in Oxford, Greene, Smithville, Preston, Guilford and Coventry, in Chenango county, granted a certificate of convenience and necessity. Transfer approved to the company of the franchise issued by the village authorities to George P. Mead to construct the lines.

June 10: Hearing in the matter of the service rendered the public by the Nicholville Home Telephone Co., C. D. Babcock, owner.

NORTH DAKOTA.

May 7: Berthold Farmers Telephone Co., Berthold, filed application for authority to build ten miles of telephone line in Shealey township and two miles in Berthold township.

May 8: Application granted of the Donnybrook-Aurelia Telephone Co. of Donnybrook for authority to increase its switching service fee from 40 cents to 50 cents per telephone per month.

May 15: Northwestern Bell Telephone Co. filed application for a certificate to construct and operate a pole and wire line to serve the towns Stanley to Grenora.

May 17: Farmers & Merchants Telephone Co., Flaxton, filed application for a certificate to build and run a wire from Flaxton to Northgate to be used exclusively for connecting line No. 10 of the Lewis Mutual Telephone Co. of Northgate, and for switching telephone subscribers on that line.

May 23: Amenia Telephone Co. and Hunter Telephone Co. filed joint application to sell and buy, respectively, certain telephone lines located in Rush River, Amenia and Arthur townships.

May 23: Dakota Central Telephone Co. filed application for approval of revised schedule of local exchange service rates for Edgeley, Gackle and Streeter.

May 23: Northwestern Bell Telephone Co. filed application for authority to discontinue toll station at Schmidt until September, 1929.

OHIO.

May 28: Application filed by the Salem Township Rural Telephone Co. and the Fairfield Township Telephone Co., both located in Columbiana county, for permission to sell to the Ohio Bell Telephone Co.

June 20: Hearing on proposed rate increase of the Ohio Cities Telephone Co.

OKLAHOMA.

June 12: Hearing in the matter of the Ketcham Hotel vs. Southwestern Bell Telephone Co. on application to install its own P. B. X. board and to fix rates for trunk line.

June 18: General hearing and investigation in the matter of fixing rules and regulations as to telephone service in Oklahoma.

PENNSYLVANIA.

May 20: Order modified by commission in the Johnstown Telephone Co. rate case by directing that a new tariff schedule be made effective July 1 instead of June 7. The company was ordered to reduce its rates so that the annual revenue would be $38,000 less than the schedule filed by the company in April, 1927.

WASHINGTON.

May 27: Order issued suspending proposed 28.8 per cent increase in telechronometer rates in Everett. The increase was to have become effective June 1 but the order suspends its operation for 90 days. The suspension was ordered as a result of a protest against the increase from the Everett city council. The department must hold a hearing in at least 150 days.

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